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CLINICAL LECTURE.

CONVULSIONS DEPENDING ON RICKETS—
VARICELLA—SPECIMEN FROM A CASE
OF CEREBRO-SPINAL MEN-
INGITIS.

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CONVULSIONS DEPENDING ON RICKETS.

Gentlemen:—Our first patient this morning is a little boy, six months old, who, his mother states, was perfectly well until about two months ago. Without any premonitory symptoms he was then taken with general convulsions, which were repeated during the following twenty-four hours, the child passing, at short intervals, from one convulsion into another. After this attack, he was apparently well, until about two weeks later when the same symptoms were repeated, the second series of convulsions being more severe than the first ones had been.

Ten days before he came here he had a third series of convulsions, similar to those which had preceded. The intervals between these different attacks were, however, free from symptoms of any kind, and since the last attack he has been apparently well.

At first sight, this boy seems to be well nourished and healthy; he is plump and weighs about 20 pounds, is not anæmic, holds his head up, has no evidence of paralysis, no fever, he is bright and apparently notices everything. What causes of convulsions are we to consider in such a case as this? Organic disease of the brain is apparently excluded, first, because his symptoms were not noticed until some months after birth, and second, because the labor was a natural one, no forceps were used, there is no rigidity of the neck, no spasms of the extremities and intellectually the child seems to be very well developed. The probabilities are that

in a case like this the convulsions are of reflex origin, and the first thing to suspect as the source of such irritation in a child is the gastro-intestinal canal. The mother states, when questioned about this, that she now is nursing her child exclusively, but that about the time of the first attack of convulsions, she gave him coffee, soup, toast, and some other varieties of solid food. At the present time, however, these have been discontinued altogether. Could the same cause have been operative in both instances, or are we to look further for the cause of these convulsions?

In many cases of convulsions in infancy no cause can be found clinically, and the convulsive habit becomes finally established, the attacks recurring at shorter and shorter intervals, until the patient passes into a stage of confirmed epilepsy. Is this case to be looked upon in such a light?

Constipation is another cause of convulsions in children, but the mother states that this child's bowels have been always regular.

There is one strongly pre-disposing cause to convulsions in infants, and one that must never be overlooked by the physician, and that cause is rickets. The nervous system of young children is exceedingly prone to convulsive attacks, and in rachitic children this proneness is very much exaggerated. Never permit a young child, after recurring attacks of convulsions, to pass through your hands without first of all making a careful and exhaustive examination for the earlier signs of rickets.

What signs are we to look for in a child of this age? First, examine the head. What do we find here? The head of this child is of normal size, but the anterior fontanelle measures two inches and a half in one diameter by one inch and a half in the other. The sutures have not united, and over the posterior part of the parietal bone I can feel several soft spots in the cranium about the size of a nickel. These are spots of cranial tabies, and are, of themselves, almost conclusive proof of rickets. Their position on this part of the head shows that they have

been produced by pressure, the osseous elements of the skull being here absorbed and the membranous portions alone remaining intact. The bony deformities, such as beaded ribs, enlarged epiphyses, pigeon-breast, bow-legs, etc., belong to a later period of this disease, and are not to be expected here.

One other point in the history should be inquired into, namely, as to the presence of head-sweats. The mother states, upon inquiry, that for several months past, while the child has been asleep, she has noticed a profuse perspiration of the head and neck, sufficient to wet the pillow considerably. There seems, then, to be very little doubt that this child who, upon first sight, seemed so fat and healthy, is the subject of rickets. Rickety children are often fat, but their tissues are usually flabby. This child's tissues are not especially so, nor is he anæmic. There is to my mind no doubt that the underlying and predisposing cause for the convulsive seizures is rickets. In such children we find that a very slight exciting cause is sufficient to bring on attacks of convulsions, second attacks always move easier than the first ones, and subsequent attacks from still more trivial causes. The exciting cause of the first attack, I judge in this case, was the improper food the mother gave the child, but what the particular thing has been that has excited the subsequent attacks, from the absence of details in the history of the case, I am unable to say.

The treatment of convulsions in children involves two distinct points: First, the treatment of the seizures, and second, the treatment of the child's general condition in the intervals, in order to prevent subsequent attacks. During the seizures, no single remedy has been in my hands so successful as the use of chloral by the rectum. To a child of this age, that is six months old, it is safe to give six grains as an initial dose, and repeat this in half an hour, and again at the end of an hour unless the attacks are controlled in the meantime. It is to be given preferably in warm milk, and we can generally count upon producing an effect in fifteen or twenty minutes after the administration of the first dose. It is often necessary to give chloroform for the first few minutes, while waiting for the effect of the chloral. Another valuable remedy in the convulsions of children, is morphia given hypodermically. There is a strong prejudice in the minds of the profession against the use of morphia in the case of young children, but its injurious effects have been owing to the overdose that has been adminis-

tered rather than to the use of the drug itself. It is certainly a drug that we can ill afford to do without in this connection. One-eightieth of a grain can be safely given to a child as old as this one, and the dose repeated in half an hour if no beneficial effects are produced. It is always best in giving morphine to children, to give small doses repeatedly, rather than a single large one at once. Ice, or iced cloths should also be applied to the head, and the child kept as quiet as possible during the attack. I will say, in this connection, that I have seen very little good result secured by the commonly employed treatment of mustard baths. Harm is often done by the unnecessary disturbances of the child. If constipation has preceded the attack, or there is a history of the child having eaten any indigestible food, the colon should be irrigated in the first instance, and in the second instance, the stomach should be washed out, whatever other methods you employ, for these procedures generally allay the attack. In the interval, in ordinary cases, it is sufficient to keep the child under the influence of the bromides for several weeks, or longer, if the attacks have occurred several times. In the case of this child, you will have to do something more. In order to control this tendency to convulsive seizures, we must give prompt and immediate attention to the rickets. To this end, we will give cod liver oil and $\frac{1}{10}$ of a grain of phosphorus, three times a day, dissolved in the oil. These remedies are to be kept up for several months, the child to be taken as much as possible into the open air, and regular habits of nursing and sleep enforced.

VARICELLA.

The second patient now I present to you for diagnosis. He is five years old, and is generally well developed. We will first make an examination of his skin and afterwards get a history of his disease from the mother.

In making an examination of a cutaneous disease in a child, it is always well to strip him completely and examine his entire body. An eruption may present very peculiar features upon one part of the body so as to render a diagnosis very doubtful; while in another part it may be perfectly typical. In adults it is not always possible for the physician to do this, but there is that advantage in pediatrics that the physician has at least, the privilege of examining the entire body of the patient.

As the child's body is now completely exposed to view, you notice it is covered with

a sparsely scattered eruption. It is discrete everywhere, a little more abundant over the shoulders and trunk than over the extremities, and rather less upon the face, than upon the body. In some parts we see vesicles, in others, papules, and in others still, you will notice that vesicles have dried and form small crusts with a slightly depressed centre. In other parts, there are found simply macules. All these varieties are found in pretty close proximity to one another. There has been considerable itching of the skin, as is evident by the amount of irritation we see about some of the older spots. Nowhere do you see any of the patches coalescing.

In calling upon the members of the class to make a diagnosis of this condition, Dr. A. says scabies; Dr. B. papular eczema; Dr. C. erythema and Dr. D. varicella. The last diagnosis is certainly the most probable one. There is one point by which we can make a differential diagnosis of varicella from any of the skin affections suggested by the gentlemen of the class, and that is by an examination of the mouth of the patient. I find on looking into this child's mouth, a typical vesicle on the hard palate, and another one upon the inside of the cheek. Under these circumstances this point is enough to settle the question of diagnosis. The appearance or non-appearance of the spots in the hair is not of any special diagnostic value. One other point by which we may differentiate varicella from many other forms of eruptive fever is the great diversity of lesions seen at the same time on the patient. This is due to the fact that the eruption comes out in successive crops every two or three days. So we may have all the different stages of the disease represented in a given part of the body.

Ordinarily, varicella is so mild a disease that it scarcely needs any treatment. A diagnosis, however, is always desirable; and in this case one fact in the history is sufficient to diagnosticate it from papular eczema or scabies, viz.: that it made its appearance within the last three days. It should be remembered that varicella may be serious and even fatal. When such is the case, it is most frequently in institutions where many children are congregated, and then usually a fatal result is brought about by complications. I have on two different occasions seen a fatal result follow an attack of varicella from a complicating erysipelas developing about the pustules. Occasionally a localized gangrene is seen, forming a dis-

tinct variety of this disease known by the name of varicella gangrenosa. Nephritis has also been observed as a complication of this disease and in a few instances, bronchopneumonia. So that in institutions practically all cases of varicella should be isolated with promptitude, as the disease is of quite a contagious character, and during the period of desquamation, warm baths should be given daily to the patient, and this should be followed by inunction with carbolyzed vaseline, or a one per cent. ointment of ichthyol. Continued disinfection of the skin during the period of desquamation is always advisable.

SPECIMEN FROM A CASE OF CEREBRO-SPINAL MENINGITIS.

I will now pass around the class for inspection a specimen of a brain removed from a child who died two days ago of cerebro-spinal meningitis. The child was perfectly well until four days before his death when he was suddenly taken ill with a temperature which ranged from 104° F. to 105½° F., throughout the day. He vomited twice in the morning and had one large, normal stool. A physical examination failed to reveal any evidence of disease either in his throat or lungs. On the following day the temperature range was between 103° F. and 105° F., and pulse from 150-160, respiration regular, and the child showed some signs of restlessness. There was no more vomiting. During the night the patient was quite restless and on the morning of the following day he developed marked signs of nervous irritability. He bit his fingers and rolled about restlessly in his crib. Muscular twitchings developed at the extremities during the afternoon, and there were noticeable signs of general hyperaesthesia. The pupils were dilated and responded imperfectly to light, but there was no rigidity or any evidence of paralysis. The child looked pale, occasionally uttered low screams and prostration gradually began to increase.

On the evening of the following day some rigidity of the muscles of the neck were for the first time noticed, with slight rigidity of the extremities. The abdomen was rounded but soft and natural. The pulse rose to 200, was very feeble, and almost imperceptible at the wrist. During the night he passed from a half-drowsy state into a condition of semicoma. On the morning of the next day he was comatose with the right hand remaining quiet and the left hand constantly moving. Twitchings of the right hand and

face were noticeable at this time and death took place at 11 A. M. that day, the temperature being $105\frac{5}{10}^{\circ}$ a few hours before that event.

No cause could be assigned for this illness save that the child had had a discharge from both ears, which, however, had ceased six weeks previous to his death. On further inquiry it was found out that the child had sustained a fall 2½ weeks previous to his fatal illness, but this was followed by no important symptom at the time. It is doubtful if either of these factors, the fall or the otorrhœa, played any part in bringing about the death of this child.

The autopsy showed all the organs essentially normal, except the brain and spinal cord. The anterior half of the brain, you will see, is covered with a thick layer of lymph and pus, giving to it a yellowish-green hue, and concealing the normal brain substance. This is found in greatest abundance over the convexity. At the base of the brain it follows the line of the Sylvian fissures, and in the posterior half, this exudate is seen in patches, but nowhere does it cover a continuous surface. It is generally found distributed along the course of the blood vessels. There are no tubercles present, and the ventricles are not distended. There is no softening of the cerebral substance.

The cord is normal, except at its lower portion, where a small collection of pus was found. There is no lymph coating the membranes of the cord.

The diagnosis of this case was exceedingly obscure until the night before the death of the child. Up to that time he presented simply the symptoms of an acute febrile illness, with very high temperature and marked prostration. Please note in the history the absence of the common and classical symptoms of meningitis, viz.: persisting vomiting, constipation, retraction of the abdomen, photophobia and early opisthotonos. It is extremely difficult in these abrupt cases of meningitis to make a diagnosis. They much more resemble cases of acute pneumonia than those of meningitis. It is only by careful and repeated examination of the lungs in this case that pneumonia was excluded.

A great deal of light has been thrown on the etiology of the cerebro-spinal meningitis within the past few years. Many of these cases of meningitis are found to depend upon the pneumo-coccus of Fraenkel. This germ has been found more frequently than any other in this particular disease. In a case of my own, recently studied bacteriologically by Dr. M. Prudden, of this city, cultures of

pneumo-coccus were found in the exudate. This case is the more interesting from the fact that the symptoms were largely pulmonary.

NEURALGIA SECONDARY TO LA GRIPPE— CHRONIC BRONCHITIS—PLEURISY WITH EFFUSION.

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Gentlemen:—This lady came to the clinic about a week ago complaining of neuralgia of about two weeks' duration. Now, we know that the ordinary person terms everything that is painful neuralgia, but when she describes the pain by running the finger down the line of the sternomastoid, down the anterior border of the trapezius, over the deltoid and over the extensor muscles of the forearm, of course we begin to doubt its being neuralgia. Neuralgia is an acute pain which is located along the course of one of the nerves. If it is neuralgia you can determine the exact nerve to which the trouble belongs. For instance, if an individual has neuralgia of one of the branches of the 5th nerve, it will be located over the portion supplied by that nerve. If it is the first branch you will have pain over the temple and around the ear, over the top of the head; if it is of the second branch of the trigeminus you will have pain over the malar bone, down along the affected side of the nose, and perhaps extending down to the jaw. If it is the third branch you will have pain in the jaw radiating down under the chin. If there be neuralgia of the cervical nerves you will have pain radiating from the back of the neck around towards the front or down towards the shoulder; and if it is the intercostal nerves, or the nerves of the arm, you will have pain following the course supplied by these nerves. If the neuralgia is due to an affection of the nerve, an inflammatory condition of the nerve, you will generally be able to locate some sore spot. In neuralgia of the second branch of the 5th, if it is due to an inflammatory condition of the nerve, you will find a sore spot in front of the ear or immediately below the eye or just below the center of the malar prominence. If you touch these branches of nerves you will have severe pain; there will be some tender spot; you may have just as severe pain in one of these nerves without any sore spot whatever. When you place your finger in

the region of the affected spot there is soreness, which extends along the muscles of the neck and shoulder. She complains of severe pain when we put the cervical muscles on the stretch. It has the appearance of a rheumatic affection of the muscles rather than of neuralgia. She tells us that some two or three weeks ago she had an attack of the grip, and after recovering in a measure from that she became afflicted with this pain. Now, neuralgias and rheumatic pains in the muscles and tendons are often secondary consequences of the grip. I have seen two or three most severe neuralgias secondary to attacks of the grip this winter. They are not what you might call true neuralgias, that is, they are not due to an inflammatory condition of the nerves; they are apparently rheumatic in character, and are relieved by rheumatic remedies. One case was under my care two or three weeks ago, following a moderately severe attack of the grip. It was a case of neuralgia of the second branch of the 5th nerve, with no tender spots especially. The face was sore over the nervous foramina and was entirely unrelieved by any of the neuralgic remedies.

All those remedies which are said to be efficacious in neuralgias of the 5th nerve, such as gelsemium, aconite, aconitine, cimicifuga, the ordinary neuralgic pills—all of those remedies from which you would expect effect in neuralgias of the 5th nerve, were entirely ineffectual. You will find that the pain is relieved temporarily, but not sufficiently so to do any good. The pain in this case was relieved by salicylate of soda administered in large doses, twenty grains every two hours. The pain disappeared promptly, and under its continued use for two or three days, failed to return. There were no unpleasant effects from its use. Ordinarily, such large doses of salicylate of soda will cause unpleasant effects in most patients, such as dizziness, tinnitus aurium, headache.

Now, the point to bear in mind in these neuralgic and rheumatic pains that result from the grip, is that they are not, as a rule, true neuralgias, they do not result from inflammatory conditions of the nerve, but are systemic conditions, and are best relieved by some anti-rheumatic remedies. This woman has been taking bromide of quinine and phenacetine, two grains of quinine with five or six grains of phenacetine, every two or three hours. While that relieves the pain while she takes it, the soreness of the muscles is much better, but still persists.

In using these synthetical remedies for pains, as a rule, if you do not get response

to the administration of them within a few hours it is best not to expect any result from them; if they do not promptly relieve the symptoms they fail, and if they afford relief at all it is within a few hours. As this soreness still persists, I think this patient will do better on salicylates than anti-rheumatic remedies. I would prescribe for her to-day, ten grains of the salicylate of soda, every two or three hours, according to the way in which her stomach will bear it. In some people it is an irritating medicine to administer as far as the stomach is concerned, and you have to be careful, especially in women, and give it largely diluted in water. I expect that will relieve her trouble better than anything else.

This lady is another victim of the current affliction. She had the grip about two or three weeks ago—a slight attack of it, and since that time has been complaining of weakness. She feels almost too weak to go about—no ambition. She also has some pain in her limbs and arms and in the back of her neck. You will notice in regard to the pains that are complained of in these attacks of the grip, barring the headache, that they are, as a rule, confined to the tendons of the cervical region and the lumbar region, with some pains in the limbs. These pains are sometimes very severe in the cervical region, and also in the lumbar region, with no special stiffness of the muscles. Her trouble now is probably the weakness that is complained of. It is somewhat surprising the amount of physical weakness which will follow a comparatively slight attack of the grip. This year the name influenza would hardly seem to apply to the disease, as there are very few cases that have exhibited any marked trouble with the mucous membranes; it is not the characteristic coryza or sneezing, or the suffused condition of the eyes or pharynx that is complained of, nor the mucous membrane of the larynx, and there is not so much bronchial inflammation in the start, though that may follow as a secondary matter. This year the symptoms of influenza are entirely wanting, and the trouble consists generally in high temperature, great weakness and pain. The weakness which follows these attacks is not at all consistent with the amount of temperature or with the length of the attack. I have seen several cases where the temperature did not go above 101°, and where there was very little pain, and yet the secondary exhaustion following the attack would last from one to three weeks. Again, you see cases with a temperature of 103° or 104° with

not very much pain, which seem to be well in a few days after the temperature goes down, so that the exhaustive effects depend upon the condition of the system of the patient, and not on the height of temperature or severity of attack.

The administration of remedies for the acute stage of this trouble may have something to do with the exhaustion which follows. It is fashionable to give antipyrine, acetanilid, phenacetine, antiferbrin with, or without quinine, both because that is the fashion of the day, and because they are very efficient remedies for reducing fever and pain, at the same time they leave a depressing effect. Any of you who have administered antipyrine in marked doses in typhoid fever or pneumonia, or any of the acute exhaustive diseases, will have noticed that you get a more depressing effect from its prolonged use, than in those cases in which these drugs are not used. These patients will take quinine for three or four days, and if they do not get much better they will go to a physician, and he gives them as much antipyrine or acetanilid as they will stand, and by the time they are beginning to get well they complain of great exhaustion due, perhaps in part, to the administration of these remedies; at any rate, there seems to be a great deal more exhaustion following the grip this year than I ever noticed before.

Another marked feature of the disease this year, is the tendency to bowel trouble—catarrhal inflammation of the bowels. As a rule there is not much difficulty with the stomach; the trouble seems to be with the intestines. The diarrhoea will begin with the active symptom of the disease, or will follow as the patient begins to get better; it is accompanied by considerable fermentation, a good deal of flatulence. The passages are frequent, thin, slightly greenish as a rule, showing evidences of imperfect digestion. That has been the case also with pneumonia. I have hardly seen a case of pneumonia this winter that has not been accompanied by diarrhoea—even the asthenic cases of pneumonia all have it, and in the other cases which occurred in people who were weak and feeble, they were also afflicted with it. For instance, a woman was under my care a short time ago who had had chronic bronchitis for years; she was very much run down in health; she had a croupous pneumonia of one lung, which got along fairly well, but the attack in her case was accompanied by diarrhoea during the course of the trouble. Another case, a

strong, active young man of 20, with double pneumonia, respiration 45, and pulse 140, temperature 104°, a very severe one, also developed diarrhoea about the time that the temperature began to drop. And so it ran through all the cases. I lost a case of pneumonia this morning in a young man of 27, where the trouble began as a gastritis, which I succeeded in relieving, when pleuro-pneumonia developed with an active diarrhoea all the time. This diarrhoea is not dependent upon what you feed the patient. I have kept them on an exclusive milk diet. I have fed them on beef peptonoids and beef extracts, and on broths; I tried every manner of diet, and it makes no difference. It seems to me some atmospheric condition.

As regards treating the exhaustion which follows attacks of the grip, of course much depends on the patient, the character of the attack, and the amount of food which they are able to take. They should be put on tonic treatment, and among the best things to feed these patients with are some of the tonic wines. Coca wine or Tokio wine, which is a good deal used just now, is very beneficial. The coca wine of Mariana & Co. is a nice preparation—one which I have used a good deal in these cases, one glassful two or three times a day. They respond to it nicely. It has a tonic action on the mucous membrane of the throat and larynx where there is troublesome cough, or hoarseness of the voice. They should be fed on light diet, that is a diet from which the starches, sugars and fats are excluded, so that you will not have much transformation of sugar into glycogen, and therefore there is not much chance for fermentation. For the tendency to fermentation and diarrhoea the best remedies are those which prevent intestinal fermentation, intestinal antiseptics. The old remedies, bismuth, or dilute mineral acids are good. It is more fashionable now to use salol, naphthol, naphthaline, thymic acid, or some such preparations. Salol is a nice remedy, and should be given in 5-grain doses in the form of a sugar coated pill, one every three or four hours. You can use naphthol and naphthaline if you so desire. Where there is fermentation in the stomach, one of the best remedies is a grain, or a grain and a half of thymic acid, with five grains of charcoal in a capsule; it relieves fermentation nicely.

This patient complains principally now of flatulence, and not so much of diarrhoea. She says her bowels are not loose at the present time, but that the flatulence is the only trouble that bothers her. I would put her

on one of these remedies—salol, for instance, with one of tonic wine, and expect her to regain strength quite rapidly.

CHRONIC BRONCHITIS.

This lady comes to us from the throat clinic. She complains of hoarseness. This hoarseness she has had for two or three years, mostly in winter. Professor Brown has referred her to us for examination of her chest in order to determine whether there is any condition there which would add to the permanency of this hoarseness. She says she has some cough nearly always in winter, and that it bothers her more in the evening than at any other time. That fact which she states of her own accord, that the cough is more troublesome at night than in the morning, would probably exclude the stomach as a cause of the cough or laryngeal irritation, for the reason that coughs which arise from the stomach, as a rule, are more troublesome in the morning than at any other time. If the reflex trouble of the stomach is the cause you will find the coughs are more troublesome; immediately after getting out of bed, they cough a long time until they raise a little mucus, then perhaps they will not cough but once or twice during the day to amount to anything. That is not only characteristic of stomach cough, but it is characteristic of trouble with the stomach in any chronic cough. Where you find the coughing spell is in the morning you may look at once for some trouble with the stomach. She says her cough is worse in cold, damp weather, sufficiently so to make her quite short of breath at times.

Expansion of the lungs is good; vocal fremitus is unchanged, and the percussion note is unchanged. The only thing I find wrong with her lungs is a slight harshness about the breathing over the upper portion of the lungs in front, produced by a little chronic inflammatory condition of the bronchial lining. Occasionally through her lungs during the first one or two deep inspirations you find solitary râles which disappear after deep inspirations, showing that there is a little adhesive mucus which is displaced by deep breathing. This may have something to do with her hoarseness, as the bronchial coughs which are worse in winter and during damp weather, which clear up during dry weather, are due to a little swelling of the mucous membrane with increased secretion of mucus, and are very apt to cause congestion of the vocal cords or of the larynx from the constant coughing and hacking which they produce, and you frequently see these

conditions of the larynx clear up after having cured the condition existing in the bronchial tubes.

Now, for the relief of that condition. You want something slightly expectorant with an alterative, especially in old women. One of the best combinations is five to ten grains of iodide of potash with two or three drops of tincture of belladonna, and about the twelfth of a grain of tartarized antimony. In children and young people, one of the best remedies is the syrup of hydriodic acid which contains a certain percentage of free iodine, and is a most excellent way to give iodine. It is very palatable. I have seen localized bronchitis, both in children and in adults, which would resist all kinds of cough mixtures and all kinds of tonics, clear up promptly after the administration of a little iodine in this way. It is especially valuable in those chronic coughs which follow whooping cough and measles in children, and it is an excellent remedy for these conditions. To this woman I should give five grains of iodide of potash, or you may give iodide of soda, either one, I prefer iodide of potash in this case, with a little tartarized antimony, and no belladonna on account of the tendency to an inflammatory condition of her throat, because if she got enough to affect the mucous membrane at all, it would make her throat and larynx dry. She would cough more and experience more difficulty with her throat, so that we will leave the belladonna out.

PLEURISY WITH EFFUSION.

This boy, aged 15, we aspirated last week. I brought him here to-day for you to see whether there is any change in his condition or not. He says he feels much better in every way. Although we removed three quarts of fluid from him at that time, there were fully three pints left. You remember that his heart was much displaced, almost to the right nipple and the lung very much compressed. As to the amount of fluid which you should remove in these cases, it depends a good deal on the nature of the effusion and on the case. Where the chest has filled rapidly, and where there is a great deal of effusion, especially in young subjects, I see no objection to removing at least three-fourths of what is there in the chest or more if you can do so without causing any dyspnoea. This boy, after he got off the table last week, as soon as he began to move around, began to cough, which was quite severe, hacking, and irritating, and was forced to lie down and rest until his lung

had accommodated itself to the greater amount of room before he could move around. Where the patients begin to cough or complain of some constricting pain in the side while withdrawing the fluid it is about time to stop.

I want you to look at the difference in the spine. You remember how much lateral curvature there was of the spine last week. That is nearly straightened out now, and it was supposed to be due to the weight of the fluid in the left side, which caused it to gravitate in that direction. You notice a little prominence on the left side of the sternum, at the costo-cartilaginous junction, it has not disappeared, and that is probably due, as we had previously supposed, to some bending of the junction of the ribs and the cartilage from pressure, and was doubtless there from infancy,—one of the slight forms of what is called pigeon breast—which is due to some interference with the respiratory conditions which produce pressure on the ribs at the time when the cartilages are soft and bend very easily. You will find these conditions developing in children who are the subjects of enlarged tonsils for a long time and have difficulty in breathing; you will find them developing a prominence along the sternum due to pushing out of the ribs, from increased pressure in the lungs made by the efforts at respiration—efforts to get the air out of the lungs, caused by the small amount of room in the throat where the tonsils are quite large. You will find that if the tonsils are removed in the early stages of these slight deformities, they will generally disappear, or at least will not grow worse.

The next thing we notice is that there is absence of pulsation in the right mammary region, where it existed last week, and that pulsation has moved over to the left of the sternum, and has almost regained the natural area of cardiac pulsation. We can now feel the action of the heart in the natural area. You notice there is some motion of that side, it is not as good as it ought to be, but it is better than it was. The percussion note is vesicular in quality down as far as the 7th rib, from that point it is more or less flat. You can hear the respiratory murmur all over the left side down to the present line of flatness and behind below the angle of the scapula. You may occasionally, when he takes a deep inspiration, hear the rubbing of the pleural surfaces over each other at the end of each inspiration—a dry, grating sound. There is still a slight amount of fluid in the left cavity.

As to the likelihood of these cases filling up again, in a case like this, a young boy who has developed that amount of fluid within a comparatively short space of time, if the fluid is taken out inside of a week or so of its development, as a rule there is little danger of the pleura refilling; but if the condition be left alone for several weeks, and the patient is very much run down in strength, you are apt to have the pleura refill again. This is especially likely in old people. In patients who are 60, 70, or 75 years old you will find pleurisy develops quite rapidly, and even though it may be removed if there is marked compression of the lung, you will find that such cavities will fill up again, so that you are apt to tap them two or three times. But as a rule after two or three tapplings they cease to refill, and you have no further trouble with them. It is probable that the small amount of fluid which remains at the end of a week in the left side of this boy will not compromise the lower portion of the lung or the pleural surface before it is absorbed, so that it is hardly worth while to attempt to withdraw it; the expansion of the lung has sufficiently increased and circulation is good enough to take it up without much difficulty. I expect at the end of two weeks to be able to get a dry friction sound clear to the bottom of the lung; this sound will disappear as the pleura becomes healed, and there will probably remain a slight thickening of the pleura which will probably do him little or no injury.

COMMUNICATIONS.

THE RELATION OF CONCUSSION OF THE BRAIN AND SPINAL CORD TO IN- FLAMMATORY AND OTHER MOR- BID CONDITIONS IN THESE ORGANS.

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It is certainly apparent to all members of the medical profession that brain and spinal surgery has received during the last quarter of this century an unusual and likewise unprecedented amount of attention. It is likewise equally apparent that great progress has been made by those who are devoted to this branch of surgery; it therefore becomes

highly necessary, that he, who is about to enter this field of medical literature, should first discover some dark spot or disputed question, on which he thinks he may possibly throw a few rays of scientific light. The traumatism of the brain and its membranes have been more fully studied than those of the spinal cord. Undoubtedly this may be accounted for in part by the fact, that the first-mentioned organ is much more frequently the seat of these lesions than the latter.

I shall therefore direct the greater portion of my attention especially to any lesions following traumatic injuries of the spinal cord and its membranes.

It seems necessary to call attention to certain errors as a preliminary to the consideration of our first inquiry.

One of the most important of these has been expressed by Mr. Erichsen, in the following language: "The consideration of the effects that may be produced on the spinal cord by *slight blows*, whether applied to the back or to a distant part of the body, is not altogether a matter of modern surgical study arising from the prevalence of railway accidents, but had, long antecedent to the introduction of modern means of locomotion, arrested the attention of observant practitioners." Since the above statement was made it has been clearly demonstrated to be erroneous by anatomical and experimental investigations. The anatomical studies have shown that the spinal cord is the best protected organ in the body, and experimentation has fully confirmed this position. The experiments which I made on dogs—the total number being 141—which were arranged and conducted for the especial purpose of producing concussive lesion in the spinal cord and its membranes fully convinced me that it required a *very severe blow*, which must even be delivered on certain limited areas of the body, in order to accomplish this object. I am likewise satisfied that this conclusion must necessarily follow a careful study of my report entitled: "An Experimental Study of Lesions Arising from Severe Concussions."¹

It should be further stated that the lesions produced in the spinal cord and its membranes are rarely apparent to the unaided eye, but were readily revealed under the microscope. This statement, however, does not apply to those cases in which there were

either fractures or dislocations involving the vertebræ; since the lesions here were comparatively coarse.

The statement that a rupture of the spinal membrane has occurred, or that there has been a gross hæmorrhage into the substance of the spinal cord, or between the cord and its membranes, is certainly not entitled to credence unless coupled with the acknowledgment of either a fracture or dislocation of a vertebra. This statement is based on my examination of the lesions found in the spinal cord and its membranes, and I am so thoroughly convinced on this point, that I feel warranted in making this positive statement.

The so-called "railway spine" includes true concussion arising from blows, falls, gun-shot wounds, lightning strokes, electric shocks, etc., likewise contusions on the back, sudden flexions of the spinal column, sprains, wrenches and twists. Dr. John A. Lidell says, in discussing the consecutive effects of some of these injuries that: "Among the remote effects of *sprains, wrenches and twists* of the spinal column, are chronic *inflammation of the vertebral joints* that are implicated, which is often suppurative in character, *destruction of the articular cartilages* and the *intervertebral substances* that are involved, and *caries or necrosis* of the adjoining vertebral bodies. In such cases, the destructive process begins more frequently at the junction of the vertebræ with the intervertebral substances than in the intervertebral substances or vertebræ themselves, because, as Mr. Hilton has pointed out, we know that in accidents, at least as far as we have been able to discover, "the most frequent lesion in injury to the spine is a partial severance of the vertebræ from the intervertebral substance."

A number of illustrative examples have already been presented, and inasmuch as this topic has already been pretty thoroughly discussed, no apparent need exists for presenting any additional instances of the same sort. I will, however, take space, to present a very instructive case, in which there simultaneously occurred lumbo-sacral abscess and suppurative spinal meningitis, in consequence of a blow on the spinal column:

The following abstract made from the report of the history of this case supplies the essential points: A healthy lad, of fifteen years, was struck by his playmate on the back with the fist. He thought little of it

¹ On Concussion of the Spine. A New and Revised Edition. London, Longmans, Green & Co., 1882.

² P. Blakiston, Son & Co., Philadelphia, 1890.

³ International Encyclopædia of Surgery, Vol. IV, p. 870 et. seq. Edited by John Ashurst, Jr., M. D., Wm. Wood & Co., New York, 1884.

at the time, but was admitted to Guy's Hospital nine days afterwards; was treated with leeches and somewhat recovered, but the pain soon returned and fever ensued. "An abscess formed on the right side of the sacrum, which was opened, and continued to discharge, the flow of pus being increased by pressure on the abdomen. He continued to get worse daily, having much irritative fever and severe pain in the back. During the last week of his life he was exceedingly restless, and often delirious; and he complained of pain in all parts of his body, but particularly in the extremities. On one or two occasions he had loss of power over the bladder and rectum, but had no other symptoms of paraplegia, and could move freely in bed." He died twenty-two days after the casualty,

Autopsy:—An aperture in the integuments at the right side of the sacrum led into a very extensive abscess, external to the peritoneum, which occupied the forepart of the sacrum behind the rectum, and external to the ilia on both sides behind the psoas muscles. The bones were exposed but not diseased. Although the abscess had discharged externally on the right, it was most extensive on the left. It had burrowed up to the left side of the last lumbar vertebra and the sacrovertebral foramen into the spinal canal. When the theca was opened, it was found to contain a quantity of greenish pus, spread over its inner surface and over the cord itself. The spinal dura mater (theca) at the point indicated, was softened and destroyed, and the cauda equina was lying bathed in pus which filled the sacral canal. The membranes of the cord were inflamed throughout the whole extent, and there was purulent effusion as high as the dorsal region. The spinal dura mater was thickened, and its inner surface had lost its smoothness and transparency, and was of a dull green color. Pus could be squeezed out from beneath the visceral arachnoid in considerable quantity. The spinal cord itself was firm, and the microscope revealed no morbid condition in its substance. On opening the cranium, cases of acute arachnitis were found over the whole surface of the brain, greenish-colored lymph being effused into the sub-arachnoid tissue, especially at the base. The inner surface of the dura mater, around the foramen magnum and on the adjacent part of the occipital fossa, was of a greenish color, from lymph effused upon it. Bronchial tubes filled with tenacious mucus. Lumbar and bronchial glands slightly enlarged. All other organs entirely

healthy.

The purulent infiltration of the spinal meninges which was observed in this case, occurring coincidently with the formation of a lumbo-sacral abscess, but without the production of paralysis, could scarcely have happened unless the sacrovertebral articulation had previously been opened, both externally and internally, but disease of the articulation itself in such a manner as to allow the products of inflammatory action to flow freely out of, as well as into, the spinal canal. Otherwise, the suppurative meningitis would pretty certainly have caused paralysis by compressing the spinal cord with its inflammatory products.

The clinical history of this lad's case, interpreted by the post-mortem appearances, appears to have been as follows: The blow on the back wrenched the sacro-vertebral articulation and caused a suppurative inflammation to be lighted up therein, particularly on the left side, and in consequence of this, purulent matter escaped in an outward direction, and led to the formation of an immense lumbo-sacral abscess; it likewise escaped in an inward direction, and caused the theca vertebralis to become softened and perforated, and extensively destroyed, and a diffuse suppurative inflammation which extended upward to the brain, to be kindled in the spinal arachnoid. It has been aptly said that "in all science, error precedes the truth, and it is better it should be first than last." I have cited the case reported by Dr. Lidell, with all its details, in order that I might bring forward some of the results of my observations, made during my recent experiments, which afford a correct and rational explanation of the condition revealed by that post-mortem examination. There will be found in the report of my experiments, eleven cases, in which there was rupture of the ligaments of the sacro-lumbar articulation. There were marked pathological changes in the organs and tissues within the pelvic and abdominal cavities in six of these cases, which were immediately connected with the rupture of the ligaments of the sacro-lumbar articulation. Let me here present the following abstracts from post-mortem examinations for the purpose of giving a correct idea of the character of the lesions: "Autopsy.—This examination re-

¹Walpole.

²An Experimental Study of Lesions Arising from Severe Concussions, by B. A. Watson, A. M., M. D., p. 32, Exp. 4.

vealed, a rupture of the ligaments between the last lumbar and the first sacral vertebrae, deep and extensive ecchymoses over the entire post-sacral and right lumbar regions. A profuse extravasation of blood into the abdominal cavity, marked engorgement of the kidneys. Brain apparently normal, slight increase of the cerebro-spinal fluid in the cavities, and the cord was congested, to the middle of the dorsal region."

"Autopsy.¹—This examination revealed the following lesions: Both kidneys congested; ecchymosis in the connective tissue covering the anterior surface of the last lumbar and the upper sacral vertebrae. The brain and spinal cord apparently hyperæmic. The removal of the integument over the sacral and lumbar regions showed an ecchymotic condition of the muscles. There had been a rupture of ligaments between the last lumbar and upper sacral vertebrae."

"Autopsy.²—This examination revealed the following lesions: Both kidneys congested; bladder distended with urine; extensive ecchymoses in the lumbar and pelvic regions involving psoas muscles; brain perfectly normal; the spinal cord was hyperæmic downward from the lumbar enlargement, including a portion of the cauda equina; rupture of the ligaments between the last lumbar and the first sacral vertebrae."

The essential point which Dr. Liddell has overlooked in his comments on the case which he has reported, are the pathological conditions of the organs and tissues within the pelvic and abdominal cavities. It was the *existence of these lesions which gave rise to the inflammation and suppuration* within these cavities. The post-mortem examination of Dr. Lidell's case sufficiently demonstrates this position. Dr. Lidell says: "The blow on the back wrenched the sacro-vertebral articulation, and caused a suppurative inflammation to be started up there." The autopsy in the case fails to show that there is any erosion of the bones or cartilage within this articulation, and its history reveals the fact, that it was only immediately before death that there was the slightest indication of paraplegia. It is therefore certain that the wrench which he mentions consisted in producing a rupture of the ligaments of the sacro-lumbar articulation and likewise, as very frequently happens in those cases, some pathological lesions within the pelvic and abdominal

cavities. The simple wrenching of any joint in a healthy subject—unattended with pathological lesions, has been amply shown to be a comparatively trivial injury, which does not lead to serious inflammatory complications or death.

The one hundred and forty-one experiments, which I made on animals, does not afford a *single example* which justifies the conclusion that injuries to the vertebral articulations are a whit more serious than those produced in the carpal and tarsal articulations; and, consequently, analogous reasonings may be here employed with entire propriety. We can not pass over the history of Dr. Lidell's case without pointing out a glaring absurdity, which may possibly have had its origin in carelessness. In this report, we are informed that a healthy boy, aged fifteen, "while playing with another lad, received a blow on the back with the fist," and in the absence of any additional statement bearing on this injury, we are left to infer that the pathological changes and even the death of the patient were directly caused by this blow.¹

He who has examined the anatomical structure of the spinal column will readily perceive the absurdity of this statement. The blow inflicted was entirely inadequate to the production of the results which followed, unless there has been omitted from this report the most important factor in the history of this case. It is true that the force of the blow might cause the lad to fall—and if at this point, the history of the case showed that the boy fell across a bar, raised a few feet from the ground, in such a manner that his feet remained on one side, while his head was on the other, then the very important factor of leverage having been added, which would result under these circumstances in the production of a sudden flexion of the spinal column, would certainly bring within the limits of possibility the occurrence of the injuries which are reported in the autopsy.

It is scarcely necessary to mention the fact, that nearly all the injuries grouped together under the unfortunate cognomen of "railway spine"—so far as their remote effects are concerned—take their origin, either directly or indirectly in inflammatory processes. Consequently the consideration of the following queries assume importance:

1. Do inflammatory and other morbid changes take their origin in traumatic injuries of the spinal cord and its membranes

¹Ib., p. 35, Exp. 10.

²Ib., p. 40, Exp. 24.

³Previously cited.

¹Previously cited.

as frequently as the writings of Mr. Erichsen imply?

2. Do inflammatory and other morbid changes ever arise from traumatic injuries which are entirely uncomplicated by immediate symptoms?

3. How soon are the inflammatory and other morbid changes developed after the receipt of traumatic injuries in the cord, etc.?

In our consideration of the first question it is scarcely necessary to give a negative reply to those who have perused the writings of Mr. Erichsen on this subject; since they have already reached this conclusion. Furthermore, the mere assumption that serious results frequently arise from wholly unimportant injuries is not sustained by clinical observations or experimental investigations. However, Mr. Erichsen, in writing of those cases in which the patient has received no blow or injury upon the head or spine, but in which the whole system has received a severe shake or shock, in consequence of which an immediate lesion, probably of a molecular character, is sustained by the spinal chord and disease of an inflammatory character, or of a disorganizing nature is developed in it, the inflammatory action eventually creeping up to the membranes of the brain, says that the cases "although necessarily more frequent in railway than in other injuries, do occasionally occur as a consequence of ordinary accidents." A perusal of Mr. Erichsen's writings has completely failed to convince me that he has supplied any basis for the support of the opinion advanced in the above statement.

In order, to demonstrate the correctness of this opinion which conflicts with all positive knowledge we possess on this subject—and which can not be supported by analogous reasoning—he should clearly establish the following facts, viz.:

(1) *That no disease of the brain or spinal chord existed at the time of the occurrence of the alleged accident.* (2) *That the consecutive inflammation did arise from the traumatism, and was not due, in part, or wholly, to a vitiated constitution.*

This evidence is entirely wanting; and, consequently we must maintain that Mr. Erichsen's statement should be excluded in cases of medico-legal evidence.

We have now devoted our attention to the consideration of the material points involved in our first query, but it would seem

proper in this connection to give some additional thought to the consecutive results of concussive accidents.

Mr. Erichsen says: "Whatever may be the nature of the primary change that is produced in the spinal cord by a concussion, the secondary effects are clearly of an inflammatory character, and identical with those dependent on chronic meningitis of the cord and sub-acute myelitis." The term concussion as employed in the above quotation evidently refers only to traumatism of the spinal cord and its membranes, but elsewhere the same author in speaking of sprains, twists and wrenches of the spinal column, says: "It is important to bear in mind that the vertebral column is more apt to suffer in these strains of the spine than in the other forms of injury that we are discussing, and that in serious cases the full force of the mischief appears to be expanded in the spine itself independently of its contents which escape uninjured." The views expressed by Mr. Herbert Page on this subject are as follows: "Happily, there is no doubt of the exceeding rarity of spinal meningitis, as an immediate result of localized injury to the vertebral column; and I know of no case in which meningeal inflammation has been caused by injury of some part of the body remote from the spine." The experimental study of concussion of the spinal cord has satisfied me on the following points: (1) True concussion of the spinal cord from blows, falls, lightning strokes, etc., is an exceedingly rare occurrence. (2) Secondary results, such as inflammation, suppuration, etc., very seldom follow the traumatism, owing to the fact, that the punctate hæmorrhages, etc., are generally widely diffused in various parts of the spinal cord, while the pathological lesions are so slight as not to supply inflammatory foci. However, the danger arising from a true concussion of the spinal cord produced by gun-shot injuries, the lodgment of a musket or rifle ball in the spinal column is attended with much more danger from consecutive inflammation, etc., than those traumatisms which have been previously mentioned because of the following peculiarities: (1) The pathological lesions are more concentrated—resembling in this respect the ecchymoses arising from a concentrated contusion. (2) The lodgment of a ball in the spinal column is very liable to

¹Ib. p., 157.

²Ib. p., 128.

³Railway Injuries, p. 21. Philadelphia. P. Blakiston, Son & Co. 1891.

¹On Concussion of the Spine, Nervous Shock, etc., p. 95. New York. Wm. Wood & Co. 1875.

give rise to a septic inflammation, pus formation, diseased condition of bone, extension of the inflammatory products to the spinal membranes, and even the cord itself. It must be universally admitted, that gun-shot wounds, fractures and dislocations involving the spinal column are very serious traumas; frequently producing death immediately, or within a few hours. Even when this result does not follow, the danger is very great from the consecutive sequelae.

Let us now take up the consideration of the second query. "Do inflammatory and other morbid changes ever arise from traumatic injuries which are entirely unaccompanied by immediate symptoms?" The conclusions reached by a careful analysis of the above question must depend to some extent on the interpretation which we give to this query. The fact must be admitted that it is not only possible for a patient to receive, under certain circumstances, severe traumatic injuries of which he remains a longer or shorter period wholly unconscious, but that these occurrences are by no means very rare. I can now recall a number of instances of this character occurring to officers and soldiers during the excitement of battle, while I was serving with the army. It also occasionally happens that drunkenness dulls the sensibilities in certain cases to such an extent as to render the patient oblivious to an injury, which he may have received, while the same condition will more or less embarrass, and sometimes even deceive, the surgeon who is attempting to make an examination. These statements possess only an indirect bearing on the question under consideration. The question relates to the immediate existence of symptoms and not to the observance of the same. A critical examination of this question in the same direction indicated in the above sentences, brings us to the following query: "Are results ever produced without causes?"—i. e., "Do inflammatory and other morbid changes ever arise from traumatic injuries, which have failed to produce any lesions?" My experimental studies of the lesions of the cerebro-spinal axis have clearly demonstrated the fact, that pathological changes are occasionally produced in this centre—some of which are even apparent to the unaided eye—while others required the aid of the microscope; but which were not followed by any symptom indicative of these lesions during the life of the animal. The question will now be naturally asked with reference to these cases: Would they not

have developed inflammatory changes at a later period? I have not before me the data which would justify me in positively asserting that a result was absolutely impossible; but I can aver that, in all these experiments—one hundred and forty-one—there is not a single case which warrants giving an affirmative answer. Surgical observations and analogous reasoning fully support the results obtained by our experimental research, not only with reference to the brain and spinal cord, but likewise in other organs of the body. Mr. Erichsen says in his recent work, "On Concussion of the Spine": "There is a continuous chain of broken ill health, between the time of the occurrence of the accident and the development of the more serious symptoms. It is this that enables the surgeon to connect the two in the relation of cause and effect. This is not peculiar to railway injuries, but occurs in all cases of progressive paralysis after spinal concussion." It would appear from this quotation that Mr. Erichsen fully concurs with us in the opinion, that the production of a traumatic pathological lesion is always indicated by immediate symptoms when the degree of injury has been sufficient to entitle it to our consideration. Observation has taught us that the existence of a pathological lesion affords insufficient proof that this injury will be followed by inflammation or other morbid changes. In fact, every surgeon can recall to mind cases of severe traumatic injuries of the brain in which there were extensive lacerations or contusions of this organ; but, in which the secondary changes were entirely absent or very slight.

The same remark may also be made in regard to gross injuries in other parts; since the same general physiological and pathological principles prevail in the cerebro-spinal axis as in the other organs of the body. It is therefore entirely proper to introduce in connection with discussions of injuries of the cerebro-spinal axis, in many cases analogous reasoning drawn from studies and observations made in other parts of the body. It must be admitted as a general rule in surgery, that the more extensive and the more destructive the primary traumatism, the greater will be the danger from secondary disorganizing processes. Does it not therefore seem absurd to attribute to a single punctate hæmorrhage or even a half dozen of these little pathological lesions the

¹A new and Revised Edition, p. 158. London, Longmans, Green & Co., 1882.

power of exciting a disorganizing process in a healthy spinal cord which may ultimately produce the death of the patient?

Is there a single well authenticated case in which such a result has followed from such a cause?

Let us now proceed to the consideration of our third question—which has a very important bearing on medico-legal cases and likewise on the diagnosis and treatment of myelitis arising from syphilitic disease. Mr. Erichsen says¹: “It would appear that surgeons and writers on diseases of the nervous system have included four distinct pathological conditions under this one term, “Concussion of the Spine,” viz.: 1. A jar or shake of the cord, disordering, to a greater or less degree, its functions without any lesion perceptible to the unaided eye. 2. Compression of the cord slowly produced by the extravasation of blood. 3. Compression of the cord by inflammatory exudations, serum, lymph, or pus within the spinal canal; and 4. Chronic alterations of the structure of the cord itself as the result of impairment of nutrition consequent on the occurrence of one or other of the preceding pathological states, but chiefly on the third.”

We have already paid our respects in full to those subjects included under the headings 1 and 2; but we have yet to deal with those embraced under headings 3 and 4.

There exists no reason to doubt that inflammation, having its origin in the spinal cord or in its membranes, may be either acute or sub-acute, or that the former need be developed at an earlier day than the latter. The important question before us for our consideration, however, is, How soon do traumatic inflammations arise after the receipt of the traumatism? This question cannot be definitely answered—the answer must necessarily be a mere approximation. Nevertheless, I think that observation and experimentation fully justify the statement that traumatic inflammation commonly makes its appearance within four days after the receipt of the injury. In support of the above, I will here present a series of experiments which consisted in fracturing the right leg of twenty rabbits²: “This was done without producing a single compound fracture. The temperature details were as follows: Average temperature before the fract-

ure 102·6; average temperature two hours afterwards 102·6; subsequent daily average temperature, first, 102·6; second, 102·6; third, 103·1; fourth, 103·1; sixth, 103; eighth, 103·1; tenth, 102·8; twelfth, 103; fifteenth, 102·8; seventeenth, 103·2; nineteenth, 103; twenty-second, 103.”

In the case of the brain and spinal cord, when there is no open wound communication with these organs, the danger of inflammatory action is greatly diminished. Furthermore, the trivial character of lesions produced by concussion, and also the exceeding rarity of the traumatism—except when it is produced by lightning strokes, electric shocks or gun-shot wounds—all combine to impress me with grave doubts in regard to its being followed by inflammation. In fact, there is not sufficient proof to justify the conclusion that any case of traumatic myelitis, or meningo-myelitis, has ever had its origin from molecular disturbances or any pathological lesions which were invisible to the unaided eye, in an otherwise healthy spinal cord or its membranes.

Let us now briefly examine the history of concussion, in order that we may, if possible, discover how these troublesome errors were engrafted on the profession. The history of concussion dates from 1705, when M. Littré published his famous observations. A prisoner struck his bowed head against the wall of his cell and fell dead. The inspection of the head failed to reveal a contusion, tumor or wound in the scalp or a fracture of the skull. The cranium was opened when it was discovered that the brain did not nearly fill the interior of the skull, while the entire brain substance seemed harder to the touch—more compact than usual. This observation has been reported hundreds of times, and it was long claimed that it demonstrated the fact that a violent shaking of the substance of the brain was capable of producing death without any appreciable lesion. Permit me here to call attention to the fact that in the report before me there is no evidence to show that there was any post-mortem examination made of any portion of the body except the head. The autopsy of the head, viewed in the light of modern science, is entirely worthless; while the position in which the head was placed at the moment the injury was inflicted, suggests the possibility of a fracture or dislocation in some portion of the cervical region of the spine. It may be well to call attention to the fact that in this case, and all other cases of concussion reported prior to the middle of the present century, the microscope was not em-

¹On Concussion of the Spine, p. 16. London, Longmans, Green & Co., 1882.

²Amputations and their Complications, p. 525. By B. A. Watson, M. D., Phila., P. Blakiston, Son. & Co., 1885.

ployed to aid in the discovery of the pathological lesions. Post-mortem examinations were very rarely made, even in cases of concussion of the brain, and consequently the case reported by M. Littre was accepted as a typical one. M. Littre, at the time he reported this case of so-called concussion of the brain, had become famous in the medical profession and, therefore, the following may be very properly applied to him: "Great errors seldom originate but with men of great minds."—Petrarch.

Mr. Erichsen in writing on concussion of the spine, in 1875, remarks: "There is little opportunity, reason, or excuse for a post-mortem investigation of that structure, which is probably the one that is least frequently examined in the dead-house, viz., the spinal cord, as it is the one, the correct pathological investigation of which, is attended by more difficulties than that of any other organ of the body. So rare are post-mortem examinations of these cases, that no instance has occurred to me in hospital, or in private practice in which I could obtain one; and, with one exception, I can find no record in the transactions of societies or in the periodical literature of the day of any such instance. The only case, indeed, on record with which I am acquainted, in which a post-mortem examination has been made of the spinal cord of a person who had actually died from the remote effects of concussion of the spine from a railway collision, is one that was published in the 'Transactions of the Pathological Society,' by Dr. Lockhart Clark. He had been in a railway collision, and without any sign of external injury, fracture, dislocation wound, or bruise, began to manifest the usual nervous symptoms. He very gradually became partially paralyzed in the lower extremities, and died three years and a half after the accident." There is no reason to believe that this man died from even the remote effects of the traumatism. The history of this case entirely fails to connect the disease from which the patient died with the railway collision. Therefore it may be properly said of those who base an argument on this and all similar cases:

"When people once are in the wrong,
Each line they add is much too long;
Who fastest walks, but walks astray
Is only farthest from his way."

—PRIOR.

¹Concussion of the spine, nervous shock, etc., p. 177, et seq. New York. Wm. Wood & Co., 1875.

A NEW OPERATION FOR HARELIP.

BY CHRISTIAN FENGER, M. D.,
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In all forms of harelip we find not an excess, but rather a defect of labial tissue—mucous membrane, prolabium and skin. The two portions of the upper lip, when brought together, are too small to form a lip of normal shape; it would require the interposition of a triangular piece of lip with apex towards the nose and base toward the border of the lip to obtain at once a lip of normal shape. The tissue defect is greatest in the skin, less manifest in the mucous membrane and prolabium; still in the majority of cases of complete harelip, the defects in these tissues also may be considerable.

It would thus seem natural to select a method of operating by which no tissue should be lost. In all the older methods the so-called "freshening" of the surfaces to be united requires the removal of at least a part of the prolabium, in some more, in others less, at the best as in the method of Nelaton¹ for small harelip, a displacement downward, to form a projection which must either disappear by retraction and atrophy or be removed, if present in excess, by a secondary operation.

About five years ago I was led to consider this question in a case of double harelip with rather defective lateral portions, in which I operated after the old method, and suppuration with consequent non-union took place. At the next attempt at union, the increased defect of tissue made union still more difficult than at the first operation. I therefore concluded to operate in my next case without the removal of any tissue, so as to have, at least, not lost anything in this respect if suppuration and non-union should make one or more later operations necessary. When I commenced to operate in this way I found it necessary to apply a separate row of sutures to the prolabium before bringing the edges of the skin together, thus closing the wound toward the mouth, and I soon found this to be a protection against infection. I have since that time never had any reason to abandon this method for any of the older methods.

I. OPERATION FOR UNILATERAL HARELIP.

1. *Incision.*—The incision is made at the border of the skin and prolabium, four to six millimeters or two to three lines deep, care being taken to guard against opening through the mucous membrane into the mouth.

It is necessary to draw the lip down in order to procure sufficient tension for the knife to divide the tissues; this traction causes anemia of the border of the lip, making the line between the white skin and red prolabium indistinct. It is necessary to be careful to have the incision precisely in this line, because a small margin of prolabial tissue left with skin will, as I have seen in one case, leave a red brim along the line of union, necessitating a secondary operation for cosmetic reasons.

The length of the incision downward and outward depends upon the shape of the two portions of the separated lip. It is unnecessary, at the beginning of the operation, to estimate the length correctly, as the incision can be prolonged later on after some of the sutures have been applied and tied, according to the requirements of the shape of the lip when united.

2. *Sutures of the Prolabium.*—Interrupted sutures of fine silk are applied or inserted from the mucous surface so as to place the knot of the suture in the mouth, the first suture close to the top of the triangle as shown. The ends of the sutures are left long and held together with an artery forcep which is left hanging down. The succeeding sutures are applied in a similar manner at a distance of from three to five millimeters from each other in a number corresponding to the extent of the line of prolabium to be united. These prolabial sutures should include the mucous membrane and sub-mucous tissue only, or as little tissue as will suffice to keep the prolabial edges together. There must be no tension whatever at the line of union; if tension exists from shortness of the labial flaps, it must be overcome by the tension sutures which will be described later.

When, apparently, a sufficient number of these sutures have been applied, they are tied from above downward, or from the nose to the prolabium, the upper or nasal suture first, the forceps being held up toward the forehead. The united line must be long enough to give sufficient length to the lip and permit the lowest point of union to be a little lower down (toward the lower lip) than the sides of the lip and the corners of the mouth. The wound to be united is now closed against the mouth—is made a sub-cutaneous wound.

3. *Sutures of the Skin.*—(1.) *Tension Sutures.* According to the size of the defect, one or two tension sutures become necessary. I have entirely discarded the figure-of-eight suture with hairlip pins and also the button and shot sutures, and always employ an in-

terrupted suture, using silk a little heavier than that used for the coaptation sutures of the prolabium and skin. In ordinary cases of single harelip one tension suture is sufficient. This suture enters the skin at a distance of one-quarter to half an inch from the cutaneous margin of the wound and is passed deeply down into the tissue of the lip. Care is taken not to have it pass through to the mouth, but to have it take in about two-thirds of the tissue of the lip, as this tension suture should be placed at or near a point where the margins of the wound are the greatest distance from each other—that is, near to the prolabium of the undivided portion of the lip. The tension suture is left with long ends held by artery forceps, and should not be tied until all the cutaneous coaptation sutures have been inserted.

(2.) *Coaptation Sutures:* These sutures for which common silk twist (which may be bought in dry goods stores, and disinfected in the usual manner by boiling it from fifteen to thirty minutes in a five per cent. solution of carbolic acid) is used, are applied from above downward, or from the nasal angle of the wound to the prolabium, at a distance of three to five millimeters. Three to five sutures are usually required. The lowest suture is passed through the ununited borders of the prolabium.

The wound is now carefully cleansed by small aseptic sponges and is finally touched with a sponge wrung out from a two and a half per cent. carbolic acid or a 1 to 2,000 sublimate solution.

If any hæmorrhage is present, it is stopped by continuous pressure, with an aseptic sponge, for a few minutes; if the hæmorrhage is slight it will cease upon tying the sutures.

The closure of the sutures should begin with the tension suture, so as to prevent the coaptation sutures from tearing through, as they would be liable to do if tied before all tension was done away with.

If, in drawing the sutures together, it is found that the middle of the lip does not come down low enough, or that there is still an indentation in the prolabium at the line of incision, it is advisable to prolong the cutaneo-prolabial incision a little on one or both sides, as the shape of the lip may require, and then apply an additional cutaneous coaptation suture.

When the cutaneous sutures are tied, the united wound should present the appearance shown.

4. *Dressing of the Wound.*—After careful cleansing of the line of the wound with

saturated solution of boracic acid, a layer of finely powdered boracic acid is dusted on, and a cotton-collodion dressing applied. When I began to use this method, I plugged the nostril with borated cotton, but on account of its inconvenience to the patient, have now discontinued this practice. I do not use iodoform-cotton or iodoform-collodion dressing, for fear of iodoform poisoning; I prefer to have the nurse or mother dust finely powdered boracic acid into the nostril every three or four hours during the day.

A single or double strip of rubber adhesive plaster extending from ear to ear is applied over the collodion dressing in such a manner as to draw the two cheeks somewhat together, for the purpose of immobilizing the cheeks and lips when the child cries or nurses.

The dressing may be changed once a day, or every two or three days, if it remains dry. If, however, the dressing becomes soaked by nasal secretion, or milk when the child is nursed, it should be changed according to the necessity of the individual case.

5. *Removal of Sutures.*—The cutaneous coaptation sutures are removed after a week: the tension suture is allowed to remain two to four days longer, if it has not been loosened by pressure atrophy or pressure necrosis of its canal. After removal of the sutures, the borated cotton-collodion dressing and adhesive straps are re-applied to be continued until the suture canals have entirely healed, which takes place toward the end of the second or third week.

At the junction of the two lateral corners of the wound, there often remains after the suturing, a small quadrangular ununited space one to two millimeters in diameter where it may have been impossible to approximate the edges of the wound. A very fine suture may help to close this little defect. If, as is often the case, this little suture cuts through, the small defect heals by aseptic granulation, requiring only very little more time than the primary union of the remainder of the wound. It leaves at most a small cicatrix in the line of union at the border of the skin and prolabium and does not result in permanent disfigurement.

The prolabial sutures will sometimes cut through and peel off if the process of healing goes on undisturbed, or some of the sutures may remain and be removed after the end of the second or third week, at a time when union is strong enough to tolerate the manipulations necessary for their removal.

II. OPERATION FOR DOUBLE AND COMPLICATED HARELIP.

The operation for double and complicated harelip is performed on the same general principles, namely:

1. *Incision.*—The incision along the cutaneo-prolabial border should be of sufficient length to cover the space of defect. A second incision should be made along the cutaneo-prolabial border of the median peninsula of labial tissue below the nasal septum, if this peninsula is so situated as to be available for use in the information of the lip.

2. *Suture of the Prolabium.*—The prolabial sutures are applied as just described for the unilateral harelip, to be tied on the oral surface of the wound. The sutures should be first inserted on both sides of the nasal peninsula until this is wholly covered and until both lateral halves of the prolabium come together at the median point of its lower border. When this point is reached these two rows of sutures are tied.

The lateral prolabial borders are now united in the median line as low down or as far out as required to give to the lip the necessary length, as described in the operation for single harelip. These prolabial sutures are tied in the mouth usually without any tension, because the prolabium, when loosened from the skin and retroverted, furnishes a flap of sufficient size and elasticity to permit of ready approximation.

It is important, as before stated, that the linear incision should not penetrate into the mouth. When, as is often the case, the cleft extends through the nostril or nasal cavity, there is a lack of prolabium near to and in the nostril, and the prolabial sutures cannot be applied high up. It is usually possible by careful dissection and separation of the mucous membrane at the oral fornix of the lateral half of the upper lip, to displace the mucous membrane to some extent laterally, so that the uppermost suture may be applied reasonably high up toward the nostril.

When the prolabial sutures have been tied, the wound presents the appearance represented.

3. *Sutures of the Skin.*—Tension and coaptation sutures are now applied as follows:

(1.) *Tension Sutures.*—For these sutures somewhat heavier silk should be employed. The upper suture should be inserted at the lower border of the nasal peninsula, the lower one near the lower border of the lip. They should be passed in and out at a dis-

tance of a quarter to half an inch of the border of the skin, and should include one-half, or a little more than one-half of the thickness of the lip. The ends should be held by artery forceps and should not be tied until all the skin sutures have been applied.

(2.) *Coaptation Sutures:* The coaptation sutures are now inserted from above downward. The first two or three sutures are inserted on both sides, between the lateral skin flap and the skin of the peninsula until this is united to the side flap throughout its entire circumference. The lateral flaps uniting in the median line just below the nasal peninsula, forms the upper portion of a Y-shaped line of union. Then the lower portion of the wound is united by two or three sutures, and a lower fourth suture is inserted through the two halves of the prolabium.

After thorough cleansing and disinfection of the wound, the sutures should be tied; first, the tension, and then the coaptation sutures.

4. *Dressing of the Wound.*—The wound should be dressed with borated cotton-collodion or in older patients, with iodoform-collodion. The nostrils, especially in older patients, should be loosely packed with borated or iodoform cotton. Over this, two straps of adhesive plaster should be applied. In older patients a strip of iodoform gauze should be laid in the mouth along the line of union of the prolabium. In new-born children the nostrils need not be packed with cotton and no iodoform gauze should be used: but these localities should be frequently dusted with finely powdered boracic acid. The dressing should be changed according to the amount of discharge, never more than once daily.

5. *Removal of Sutures.*—The coaptation sutures of the skin may be removed at the end of the first week; the tension sutures according to the amount of tension remaining, usually late in the second week; finally, what may remain of the prolabial sutures should be removed still later when the union is so solid that the upper lip is able to tolerate manipulation.

It is immaterial how narrow the new upper lip may appear to be immediately after the operation. König remarks (in speaking on plastic operations on the lips—keiloplastic operations following the extirpation of labial carcinomas) that the shape of the mouth, however deformed it may appear, on account of unequal size of the lower and upper lip in the first weeks after the

operation, that in the course of some months the shape of the oral orifice and lips becomes more and more normal, surprisingly so when a sufficient time, from three to six months, has elapsed.

The all-important feature of the operation is to make the upper lip long enough in a sagittal direction, and to have exact union of the lower portion of the prolabium.

Apparatus to draw the cheeks together for the sake of immobilization or to diminish tension I have up to this time found superfluous.

CONCLUSIONS.

The two main points in this harelip operation are the incision and the prolabial sutures.

1. The incision, a linear incision, is similar to that made in the operation for laceration of the perineum as proposed by Lawson Tait, and by him termed "flap-splitting." As stated above, this possesses the advantage of not sacrificing any tissue of the parts already more or less defective; on the other hand, repeated denudations made necessary by unsuccessful attempts at union would tend to make the lateral portions of the lip smaller and smaller. Furthermore, the linear incision, by loosening the everted prolabium (which is readily converted into mucous membrane by the simple change of position into the oral cavity) furnishes so much tissue for the posterior surface of the lip that union of the prolabial borders is easy, even before any tension sutures have been applied.

2. The prolabial sutures should be accurately applied. Fine curved needles should be used, the sutures made of fine silk. Interrupted sutures should be employed, in sufficient number and at sufficient intervals to furnish exact union. These sutures close the wound against the mouth and make the wound, so to speak, cutaneous instead of visceral, and thereby prevent infection from the ever-present multitude of microbes in the mouth. I believe that this suture will prove to be a potent factor in securing uniform results by preventing suppuration and non-union of the wound.

3. The cosmetic results have been all I could desire. If a slight indentation at the line of union of the prolabium has existed immediately after the operation, it has generally disappeared after a few months, provided the lip has been made long enough at the time of the operation.

4. I think that this method is applicable in all cases and should take the place of all the numerous older methods of operating.

SOCIETY REPORTS.

AMERICAN MEDICAL ASSOCIATION.

FORTY-SECOND ANNUAL MEETING, HELD IN WASHINGTON, D. C., ON TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY, MAY 5, 6, 7 AND 8, 1891.

The Address of Welcome.—The proceedings of the general session were opened at Albaugh's Opera House, with an address of welcome to the members and delegates by the Hon. J. W. Ross, one of the Commissioners of the District of Columbia. He characterized the association as representing a constituency more numerous and powerful than any other on the face of the globe and one whose influence could not be over estimated. No similar organization ever occupied the vantage-ground held by the association for the discussion of topics calculated to enlarge its usefulness and power. One of the primary objects at which it was aiming was the promotion of such legislation as would tend to strengthen the profession in the performance of its duties. As a member of the bar he had often marveled at the fact that the common law, which respected the confidence that should exist between counsel and client, did not extend the same privilege and protection in the case of the physician and his patients. If any communication should be absolutely sacred and beyond the inquisition of the witness stand, it should be the statements made by an individual to his medical adviser. He thought that the time had come when any suitably expressed statements of the rights and requirements of the medical profession in this matter to the great body of lawmakers in Congress would be treated with the most profound respect.

The President's Address.—In the course of his address the President reminded his hearers that they were met solely for the promotion of science and for the good of the human race, to maintain the honor and dignity of the profession, and to hold aloft the flag of honorable medicine. They were there to lay their contributions, the results of study and observation, upon a common altar for the common good; to worship at the sacred shrine of medicine and to renew their fealty to the noble profession to which they had devoted their lives and linked their fortunes. As physicians they had an almost superhuman mission to fulfil. The chief object of their professional work was to preserve life and insure health. The goal of their ambition and desire was almost

at the end of human capacity. It was their province as well as desire to know all the secrets of natural organization. They would have the formative crystal and the germinal spot made transparent. They would enter the microscopic world and witness the wonders therein revealed, and would, if possible, search into and unravel the very mysteries of the vital principle. To this perfect knowledge did they aspire. It was doubtful if man's intellect, great as it was, could ever compass all that he so earnestly desired; yet, by constant and faithful work, he might approach nearer and nearer to its consummation. In every part of the habitable world, blessed with the light of civilization, active, busy members of the profession, endowed with high culture and incited by the noblest resolves, were enthusiastically engaged in unraveling the mysteries of disease and seeking means and methods of treatment for the mitigation and relief of suffering and the prolongation of life. That the full benefit of the labors of American physicians might be attained and utilized, it was essential that the members of the profession, scattered over an area of country of almost inconceivable magnitude, should be brought into associated action and be organized into a body whose influence might be exerted over the length and breadth of the land, until a correct and noble sentiment was engendered in the mind of every member of the profession.

One of the great benefits conferred by the association was the establishment of an *esprit de corps* in the profession by the preparation and adoption of a code of ethics which comprised the great principles of truth, honor, and justice in regulating the relations of physicians to each other, to their patients, and to the public. This should be and was the written law, clearly defined, and of acknowledged force and effect, that prevailed from one end of the country to the other. It formed an impassable barrier between the sheep and the goats, the clean and the unclean, the physician and the charlatan. The strict observance of this code had done more than anything else to maintain harmony in the profession and to elevate it in the public estimation. It embodied the true spirit of the golden rule. Every one who entered the profession should be provided with a copy of the code, and should make it the guide of his medical life. It would serve as a talisman to the young physician, and would be the best safeguard against snares and pitfalls. It would seem that every honor-

able and high-minded member of the profession would be willing to indorse and be controlled by this code. It was to be regretted that there were some, who undoubtedly possessed a high order of talents and were justly distinguished, who had still an utter repugnance to the observance of certain parts of the code, and who held themselves aloof from the association in consequence. These gentlemen were probably as proud of the noble profession to which they belonged as any others were, and were equally anxious for the advancement of its interests, but could they conscientiously affirm that the motives by which they were influenced were pure and unselfish? Should these members put their opinion against the unbiased and unselfish judgment of the wisest and most experienced in the profession, nine-tenths of whom were guided in their actions by the spirit and letter of the code?

The fundamental and chief object of those who had originated the association was the improvement of the American system of medical education, and the elevation of the standard of requirements for the professional degree. Never had there been a greater expenditure of effort illumined with genius and learning to accomplish these two great objects, and, though many of the ideas were, in a country so diversified in character and extent, probably somewhat Utopian, there had been a gradual elevation of the standard of education fully equal to the progress of the country in every other department of human learning. The speaker was ready to maintain that the advantages and facilities for medical instruction in this country, even at the present time, were quite equal to those of any other, and that the medical colleges had produced as able, learned, and successful practitioners as had ever been graduated from other institutions. While he was willing to admit that our trans-atlantic brethren had excelled in experimental work, this country had taken the lead in all the practical departments of medical science.

Now that the Medical College Association had adopted all the requirements for improved medical education which this association had been so long urging, and for which in fact it was established, it was eminently proper and important to pass a resolution that after the changes contemplated had gone into effect no medical man who had received a degree from a college that had not adopted the improved method of teaching, and no professor or *attaché* of

such college, should be eligible as a delegate or member of the association. This great moral support was due to those colleges which had so heartily taken up the burden that the association had for nearly half a century carried on its own shoulders.

It might be well to call attention to the fact that original research and experimental investigation had not received the attention from American physicians which their importance demanded. The government, while the most liberal and best in the world, had never seemed to comprehend that the cause of science would be greatly advanced and its own honor increased by the establishment of schools for original investigation and experimental research. It had not kept pace with other enlightened governments in scientific enterprises. Such work must in the very nature of things be left, for the present at least, to the progressive spirit that animated the universities and to private laboratories which were being established in different sections of the country. It would probably be advisable to establish a Section in Experimental Research, which would tend to advance science and be greatly to the interest of the work of the association.

It had been a happy conception of one of their most distinguished presidents to make the establishment of an association *Journal* the burden of his inaugural address, and so powerfully had he impressed the minds of the members that a journal had sprung into existence which had in a short time given evidence of its power in the advancement of its purposes. It might require years to bring it to the desired standard. To effect so desirable an object it was necessary to make provision for an ample annual income. Nothing less than from seventy-five to a hundred thousand dollars should be considered ample. Next in importance to its financial needs was the selection of an editor, able, learned, and highly endowed with editorial tact and business qualifications, who would devote all his time and talent to his editorial duties. He should be empowered to spend money liberally in obtaining scientific material, original communications, translations, and reviews from every part of the world. He should have absolute control in the selection of matter for the journal. To such an editor a salary should be given that would render him independent. The sum should be not less than ten or fifteen thousand dollars a year. The necessary funds could, by proper exertion, be easily raised, and would

not only sustain the journal in the best style, but afford a sum in addition which could be used in many ways to the advantage of the association. The future location of the journal was a matter of such importance as to require careful consideration. Its weal or woe might depend upon the action taken at the present meeting. It had been suggested that the *Journal of the American Medical Association* should be moved to Washington, and it had been determined to submit the question to the members and delegates present at this session. He would beg the delegates and members of the association to consider well every side of this question before committing themselves to a vote. The *Journal* had now its home in Chicago, and had been there for eight years. It had already become the peer of many of the great weeklies of the country, and, if properly sustained by the profession and wisely and energetically conducted by its managers, it would become the recipient of the best thoughts of this country and the worthy exponent of the American profession. It had been proved that it could be more economically published in Chicago than in Washington, which latter city was by no means an important scientific or professional center. But it was the great center of American politics, to which everything was made subordinate, and it would be impossible, if the *Journal* was published in that city, to prevent its becoming contaminated by the political air.

The Relations of Contract Surgeons to the General Profession.—A special committee, appointed last year by the Medical Society of West Virginia to consider this subject, memorialized the association and appealed for its active co-operation to effect the redress of alleged abuses. The memorialists asked consideration of the question as to how far the rules adopted by railroad corporations for the government of the surgeons in their service infringed upon the rights of the profession at large as set forth in the code of ethics of the American Medical Association. It was well known that large bodies of men were in the employ of these corporations, and that these men lived in widely-scattered communities. The corporations had established systems of employing contract surgeons to attend to employees and passengers injured by accidents. It was also well known that these corporations had adopted rules for the government of the surgeons and of those injured which demanded that these surgeons should assume

entire charge of such employees or passengers when injured, regardless of the rights of any outside medical men who might have been summoned and be in attendance upon the injured prior to the arrival of the company's surgeon, even though the physician first in attendance might be the family physician of the injured person. Notice had been given in most cases by the railroad companies waiving all responsibility in respect of injuries treated by non-contract men. It was assumed by the memorialists that this condition of affairs placed the contracting surgeons in direct conflict with the spirit of the code of ethics, and was an infringement upon the rights of the physician first called. The practice of accepting passes as compensation or in lieu of the regular fees was detrimental to the profession's interests by lowering the standard of surgical services, and was further demoralizing. It gave to these wealthy corporations services at far lower rates than the profession charged to individuals. It seemed that if members of the profession were at liberty to make contracts to furnish an unlimited service of the kind referred to for passes, and in some cases for small fixed money payments, without affecting their ethical standing, all stigma of unethical or unprofessional conduct should be removed from those of the profession who contracted with private individuals to furnish medical or surgical services, including medicines, by the month or year for fixed sums. A special committee was voted to sift the facts in respect to the points alleged in the memorial.

The Rush Monument Fund.—This subject was again brought before the association by Dr. A. L. Gihon, who for the seventh time reported slow progress toward the accumulation of the required fund. He made an earnest appeal for more enthusiasm in the matter, and propounded certain schemes that might be adopted for the purpose of raising the necessary money, which were approved.

The Address in General Medicine.—Dr. E. L. Shurly, of Detroit, delivered this address. He said he should present for consideration some points bearing on the relation of micro-organisms and toxins to the so-called zymotic or infectious diseases. Though laboratory work had done more than any other branch of science toward clearing up many vexed questions about physiological and pathological activities, yet, to be of lasting value and guidance, it must agree with general and clinical obser-

vation, and there were instances where laboratory and clinical observations had crossed swords. He was aware that it was generally accepted that bacteria or their spores were the essential cause of most, if not all, of the infective diseases, and the results of bacteriological investigation during the last few years would seem to support such a doctrine for the following reasons:

1. They could be isolated by color reactions and thus directly connected with the diseased body when found. 2. They required a certain time for development, corresponding to the period of incubation of such diseases, many of them being ectogenic and saprogenic, anaerobic or aerobic. They could thus live until the opportunity for invasion offered. Being endowed with life and multiplying enormously, they could resist destruction. Being protoplasmic and microscopic, they could more readily affiliate with animal fluids, cells, and tissues existing in a passive or quiescent state as well as in an active one. They could behave like vegetable seeds or spores, and preserve a long period of latency. For these and other reasons that might be adduced, we were led to believe that bacteria must be the cause in some way or other of the zymotic infectious diseases. But the question arose, How did they effect this result? Was it by mere local growth as parasites, or by the secretion of a material from themselves? In other words, were they secreting cells or did they induce at once chemical changes or fermentation of a destructive character with the formation of poisonous substances? It would be seen that many observers who were strong in their faith in the microbic origin of disease had not in every instance looked fairly at the question. The statement that no case of genuine cholera had as yet been reported in which the comma bacillus was absent had been disproved. In what bacteriological life were exemplified certain effects that had been observed connected with development? The career of bacteria *ad interim*, from one animal to another, was not well known. In the case of many of them, spores had never been demonstrated or their behavior formulated. Most of the species were destroyed by the healthy fluids or tissues, and hence their destiny depended upon a favorable nidus or pabulum, which meant disease. It was obvious that artificial culture in media outside the body or in the lower animals could only approximately reflect their real natural growth and development, for in no instance was it possible to transfer the artificially

cultivated micro-organisms to an animal with the absolute certainty that nothing else accompanied the bacteria. The certain species only appeared to be pathogenic implied a state of specialization analogous to that of living nucleated cells. That their action was local primarily in all cases might be assumed, because their behavior in no way showed that they themselves invaded or maintained their existence in the blood or lymph. Therefore it was possible that pathogenic bacteria developed only where previous disease or an abnormal state of the body suitable to them existed; that, having found such, they took root, as it were, and by their catalytic action primarily, and secondarily by giving rise to a particular toxine, which in turn acted selectively as a tissue poison. If the bacilli of tuberculosis immediately produced the several diseases known as tubercular, why should any previously prepared nidus be necessary? If they or their still undemonstrated spores were constantly invading us, which was undoubtedly true, they must at once be destroyed, or, by gaining access to the fluids of the body, must set up, mechanically or otherwise, inflammation and their peculiar effects as any other foreign body would. But, as such micro-organisms must find just the proper conditions for development or not develop, we might assume that such a result implied previous disease, such as caseation, whether tuberculous or not. Complex and delicate processes attended the changes of proteids, and by radical or atomic substitution one might be changed readily into the other. We could see how probable it was that these micro-organisms might operate by a peculiar property which enabled them to decompose or exercise a catalytic action on certain states and kinds of proteids. It was manifest that diseases arising from the presence or entrance of micro-organisms must be therapeutically treated by attacking the cause or neutralizing its operation. The bacteria produced for themselves, or from the organic substances which they attacked, a poison which could be cultivated outside the body in some instances. Pathological chemistry had not demonstrated with exactness the nature of all these poisons, or classified them, but it was fair to believe that this would be done in the near future. Although it was generally supposed that inorganic chemicals were not tissue poisons, but acted only upon the functions through the nervous system, still this view did not obtain when we observed the changes produced by iodine, bromine,

phosphorus, arsenic, and the silver, gold, platinum, and cupric salts, besides some of the vegetable alkaloids. In consideration of the changes that many of the remedies underwent in the stomach and intestines by oxidation or other processes before their absorption, it seemed to the speaker that the rational mode for the administration of drugs was to give them hypodermically, and in this way it was possible to command effects which could not otherwise be attained. Dr. Lauderer had obtained beneficial effects in phthisis from hypodermic injections of balsam of Peru. Behring had recently found that a number of chemical substances used hypodermically—such as aurochloride of sodium, naphthaline, and trichloride of iodine—were capable of neutralizing the poison of diphtheria in guinea-pigs, the latter substance being the most active of all. The same observer had also practiced in diphtheria, and with good effect, the inoculation of animals with bacillus cultures. Better effects had been obtained from the administration of bromide of gold by injection than from the bromide given in the ordinary way. The prompt results in the treatment of erysipelas with carbolic-acid injections were well known. The superior effects of the treatment of syphilis by the hypodermic injection of cyanide and bichloride of mercury and chloride of gold and sodium were striking. The hypodermic injection of chlorodyne in profuse diarrhœa was superior to its administration by the mouth. Ergot administered, even in considerable quantities, by the mouth would often fail, whereas one, or at most two, hypodermic injections of one-tenth or one-fifth of a grain of ergotin would generally stop a severe attack. Digitalis also acted upon the cells and vascular system more certainly when so administered. He might also mention the beneficial effects of strychnine used in the same manner in typhoid conditions. That animal poisons could be neutralized in the body he believed would soon be generally demonstrated. The recent experiments of Tyndale, of New York, for the cure of tuberculosis by vaccination promised well. Hemmeter had stopped the diphtheritic process by the inoculation of the patient with an erysipelas toxine, and it was stated that persons suffering from tinea tonsurans were proof against diphtheria. This would seem to show that there must be a sort of antagonism between animal and chemical poisons. Why could not more universal application be made of this principle with a view to obtaining more specific therapeutic agents?

His object in choosing this subject had been to awaken a more general interest in physiological and pathological chemistry, and thus hasten the period of release from empiricism.

The Address in Surgery was on Stricture of the Rectum; its *Ætiology*, Pathology, Symptomatology, Diagnosis, and Treatment, by Dr. J. H. Matthews, of Louisville. He said he realized that in discussing this subject he should take positions contrary to the accepted teachings of the day, but assumed that the one great object of the meetings of this association was to elucidate and discuss subjects that were in doubt, those that were mooted. In considering the classification of the varieties of stricture of the rectum as given by Dr. Kelsey, he said that the idea intended to be conveyed by the term was that of a pathological change in the tissues, a deviation from the natural state brought about by disease; hence he objected to the consideration of congenital malformations of the rectum, or to defining them under the head of strictures of the same, for the reason that it was misleading to do so. It would be more to the point to call them atresias of the gut. Exception could also be made to the term acquired stricture, and it was very easy to understand how one could acquire a stricture as the result of venery, but difficult to understand how one could acquire a spasmodic or cancerous stricture. He would adopt, for the sake of discussion, the classification into—

1. *Spasmodic*.—To this form of stricture he should prefer two objections. First, if it was true that such a condition ever existed, which he doubted, then it should not be classed as stricture at all, for the reason that no pathological change was manifest such as was necessary to constitute a stricture, and no treatment could be given *per se*. In other words, it would be a symptom of some lesion or trouble outside the one called stricture. Secondly, he believed that, from the anatomical construction of the rectum, it would be utterly impossible for its lumen to be so constricted by spasmodic contraction of its muscular fibers as to be perceptible as an obstruction. In all his examinations of this part of the gut he had never seen a spasmodic contraction that could be called a stricture.

2. *Dysenteric*.—Although it was frequently stated that dysentery was a common cause of stricture of the rectum, he had never seen a case that convinced him of the truth of the statement or that it was a cause at all. He had many times seen patients

who gave him a history of having had dysentery; and who were treated for a long time for the affection; but close scrutiny of the case had revealed the fact that the so-called dysentery was caused by an already existing stricture and ulceration. Dysentery was the result, not the cause, of stricture. If a long-continued irritation was kept up in the rectum from any cause, the result would be, of course, an inflammatory exudate, resulting, perhaps, in ulceration and stricture; but, in searching for this as a cause, the road to a conclusion had not been plain enough for him to put dysentery in the list as a cause at all for stricture of the rectum.

3. *Tubercular.*—Since the discovery of the tubercle bacillus it was self-evident that tuberculosis was often met with in the mucous membrane and other structures of the rectum. If stricture and ulceration was the term used, he could make no objection to the classification of tuberculosis as a cause of ulceration. That ulceration frequently resulted from this diathesis or dyscrasia no one could doubt, or that the coincident stricture followed as from other well-known causes—notably syphilis—he could not agree. The disposition of tuberculous tissue everywhere was to break down. Before the capacious rectum was filled with tubercular deposit sufficient to stricture it, it would have broken down from ulceration, and so on; and it must be by deposition only that we could conceive of stricture from this cause, because cicatrization was so rare and so feeble in these parts that it would be the rarest accident to find it. In no instance had he ever seen a stricture of the bronchial tubes the result of tuberculosis. There would be just as much reason to expect it here as in the rectum; indeed, more.

4. *Inflammation.*—This term was so broad and comprehensive that we must admit inflammation as a cause of stricture of the gut—indeed, as the one grand and common cause. In no other way could a stricture be formed. It might be argued that a lesion or wound existing in the bowel, by the reparative process healed and left cicatricial tissue, and that the stricture was the result of the cicatrix, and not of plastic infiltration of the tissue. But there could have been no cicatrization if there had been no inflammatory process. If he were asked what was the prime cause of stricture of the rectum, he would answer, Inflammation. What caused the inflammation in many cases he did not know, but, ordinarily, it was syphilis, cancer, or trauma—if by

trauma was meant a wound or lesion from any or many causes. Outside of the two first named, cancer and syphilis, he was satisfied that no one could tell the cause that originated the stricture. He wished to reiterate that, outside of these two well-recognized causes for stricture of the rectum, he was not prepared to admit any other as a well-known, recognized, indisputable cause.

After elaborating the points in the diagnosis and pathology of stricture, the speaker went on to deal with the question of treatment, premising that he should adhere in the strictest sense to the pathological condition—namely, a stricture. This entirely ruled out the treatment of proctitis or the subsequent ulceration, which was one cause of stricture, and brought him directly to the means of treating that which was the result of said causes. It must be granted that many times ulcerations which would otherwise end in stricture were cured before that condition resulted. This could not hold in cancer, and possibly not in syphilis. The methods practiced to-day for treating stricture of the rectum were: first, dilatation; second, incision; third, electrolysis and rac-lage; fourth, excision; fifth, colotomy. Of course, under the division he had made, general treatment was ruled out, and the gradual dilatation of the stricture was objectionable for the reason that by this form of repeated irritation, more plasma was thrown out and the stricture surface increased. It might be true that some temporary relief was afforded, but upon the contraction of the tissue more was lost than had been gained. He did not hold the view that by the passing of bougies through the strictured surface absorption of the tissue was caused, but believed that the converse was true. Why forcible divulsion was seldom applicable in these cases he could not understand. If a fibrous stricture existed, forcible divulsion was the best method. To-day we did not fear hæmorrhage, because we understood how to control it. He was very positive, then, in saying that, if dilatation of a stricture of the rectum was decided upon, it should be a forcible and a radical one. He was very partial to incision or incisions for the relief of stricture of the rectum. Of the two operations recommended, internal and external posterior linear proctotomy, he preferred the internal. It was urged for the external, which consisted in not only cutting through the strictured surface but also in dividing the sphincter muscle, that it was all-important to get the necessary drainage. He did not think so—and if he did, he be-

lieved the ill effects of dividing the sphincters outweighed the matter of drainage. His plan was to introduce a three- or four-valve speculum and, after dilating sufficiently for the purpose, a long, sharp knife was used to divide the constrictions of fibrous tissue down to a healthy base—not only in the median line, but in several places around the circumference of the gut. He then placed a tampon, through which was inserted a metallic tube for drainage and the escape of gases. This tampon was aseptic and usually dusted with powdered persulphate of iron. On the fourth day it was removed and the rectum was irrigated with the mercuric solution. If the operation was done effectually, he had never seen the necessity of employing the bougies afterward for the purpose of dilatation.

Excision.—He thought a better term to employ here would be extirpation. Excision of a stricture of the rectum conveyed but little idea of the operation. He could not appreciate the idea of excising a benign stricture. Extirpation of the rectum for malignant disease was an ideal operation. It was an axiom in surgery that in operating for cancer the whole growth must be removed, together with the glands that were involved. If the growth extended beyond the point where it was prudent to operate, it was best not to attempt its removal, except, perhaps, for total obstruction, not with any idea of cure. Kraske's operation was admirably suited to cancerous stricture. It consisted in resecting the diseased part through an opening made at the left side of the sacrum. This operation was only applicable in a certain class of cases. If the sigmoid flexure was involved, it would be of no use. According to this method, the soft parts were divided in the median line from the second sacral vertebra to the anus. The muscular attachments to the sacrum were divided as far as the edge of the opening on the left side. The coccyx was removed, the attachments of the two sacro-sciatic ligaments to the sacrum were cut, and the soft parts were drawn to the left side. If still more room was necessary, it might be gained by removing a part of the lower left side of the sacrum. If the bone was divided on a line beginning on the left edge, at the level of the three posterior sacral foramina, and running in a curve with the concavity to the left through the lower border of the three posterior sacral foramina, and through the fourth to the left lower border of the sacrum, the more important nerves were not injured and the sacral canal was not opened.

In this way the lower part of the rectum as far as the sigmoid flexure might be resected. It would be found in this operation that the dissection was a very difficult one.

As to colotomy, he was forced to conclude that none of the arguments in its favor, instead of other methods for cancerous stricture, could be substantiated in fact. If he were asked when colotomy was justified in cancer of the rectum, he would answer, Not at all. But if there was a total obstruction of the sigmoid flexure from a cancerous mass, colotomy would be justifiable. Whenever a stricture other than malignant, especially when caused by syphilis, was located in the movable part of the gut or in the sigmoid flexure, either causing total obstruction or about to cause it, colotomy should be done. By this we prolonged life indefinitely. If, then, it was decided to do colotomy, which of the two operations was preferable—the lumbar or extra-peritoneal, or the iliac or intra-peritoneal? He thought the anatomical phrase used in designating the two should decide it.

The Association's Journal.—The vexed question as to whether the publication of the *Journal* of the association should continue in Chicago or be removed to Washington, which it was supposed would form the subject of warm debate, was settled by an overwhelming vote to maintain the present arrangements.

Recommendations for change in the editorial and business management of the *Journal* were rife.—*N. Y. Med. Jour.*

SELECTED FORMULÆ.

TREATMENT OF ACUTE CORYZA.

According to Dr. Tissié, in the *Revue de Laryng., d'Otolog. et de Rhinolog.*, May 1, 1891, acute coryza may be dependent upon certain difficulties of the general nutrition. In such cases, to effect a cure, these symptoms as well as the local manifestations should receive the physician's attention.

Locally, Dr. Tissié claims efficacy for inhalations of a few drops of the following mixture, poured upon absorbent paper:

R

Carbolic acid.....	5 grammes.
Water of ammonia.....	5 "
Water.....	15 "
Alcohol.....	10 "

M. et Sig. For inhalation.

Antipyrine will be found valuable in relieving the headache accompanying acute coryza. Finally, the author advocates the

use of the following snuff, five or six times a day:

R	Sub-nitrate of bismuth.....6.00 grammes.
	Powdered benzoin......6.00 "
	Carbolic acid......4.00 "
	Menthol......0.20 "
	Morphine......0.03 " M.

Donna, in the *Province Médicale*, speaks highly of the value of ichthyol similarly used.

METRORRHAGIA.

R	Ergotini.....10.00 grammes.
	Aq. dest.....70.00 "
	Glycerini.....20.00 "
	Acid salicylici.....0.20 "

M. et Sig. One teaspoonful in three teaspoonfuls of water for rectal injection.

—Reinstadler, in the *Raccogliore Medico*, April 30, 1891.

ARISTOL IN GYNÆCOLOGY.

Swieciki, in the *Raccogliore Medico*, April 30, 1891, gives the following formulæ for aristol, which he claims to have found most efficacious in twenty cases of metritis, hyperplasia of the cervix, parametritis and eczema of the vulva.

- I. Aristol..... 5 grammes.
Powdered gum arabic.....9.5 "
To make 5 pencils about 5 centimetres long.
- II. Aristol.....0.50-1.00 grammes.
Cocoa butter.....9.5 "
To make 10 vaginal suppositories.
- III. Aristol.....5.00 grammes.
Sugna.....5.00 "
Lanolin.....1.80 "

M. et fiat unguentum.

SALICYLATE OF MERCURY.

For hypodermic injections Vacher uses the following solution:

R	Hydrarg. chloridi corrosiv..... 1 part.
	Sodii salicylici..... 2 parts.
	Aque destil..... 100 parts. M.

In this solution each cubic centimeter contains one centigram of salicylate of mercury. For use by the mouth a 1-1000 to 1-5000 solution should be used.—*Deutsche Medicin. Wochenschrift*.

CHRYSAROBIN FOR HÆMORRHOIDS.

Kossbudaki (*Bul. Gén. Ther.*) has used with success this remedy proposed by Unna. For external hæmorrhoids this ointment is used:

R	Chrysarobin.....gr. viij.
	Iodoform.....gr. iij.
	Ext. belladonnæ.....gr. vj.
	Petrolati.....3 iv.
	Ft. ung.

For internal use, a suppository:

R	Chrysarobin.....gr. j.
	Iodoform.....gr. ½.
	Ext. belladonnæ.....gr. ½.
	Olei theobromæ.....gr. xxx. M.
	For one suppository.

DYSMENORRHŒA.

Monin (*L'Union Médicale*) recommends the following for dysmenorrhœa of chlorosis:

R	Alcohol of melissa.....
	Tincture of saffron.....
	Tincture of iodine.....
	aa 1½ ounces.

M. Twelve drops daily, before each of the two principal meals, for two months.

Every eight days, a warm bath, containing three and one-half ounces of chlorate of ammonia.—*Univ. Med. Mag.*

PRURITUS.

The following are given by *La Semaine Méd.* for pruritus:

R	Pure resorcin.....3 j.
	Glycerin.....3 ij.
	Water.....3 iv. M.

Sig.—For external use.

R	Menthol.....3 iij.
	Glycerin.....3 ij.
	Water.....3 iv. M.

Sig.—For external use.

APPLICATION OF ICHTHYOL

According to the *Revue Générale de Clinique et de Thérapeutique*, Unna employs the following preparation of ichthyol in the treatment of diseases of the skin:

R	Ichthyol.....25 parts.
	Starch.....50 "
	Carbolic acid.....2½ "
	Water.....25 "

The ichthyol and carbolic acid are dissolved in the water while hot, and the starch added.

CHRONIC BRONCHITIS.

L'Union Médicale recommends the following pill for chronic catarrhal bronchitis:

R	Turpentine }aa 3ss.
	Tar }
	Balsam of Peru.....3jss.

Benzoate of sodium, a sufficient quantity to make 80 pills.

Two of these pills may be given three times a day, in cases in which there is a marked catarrhal exudation into the bronchial tubes.

THE MEDICAL AND SURGICAL REPORTER.

ISSUED EVERY SATURDAY.

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The Editor will be glad to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

LEADING ARTICLE.

CURETTING OF THE UTERUS IN PUERPERAL FEVER.

It is a surprising fact that while the microbic origin of puerperal fever has been recognized for some time, the use of the curette in these cases has only recently received any extensive consideration. If simple cleansing or irrigation of the parts proves insufficient to remove the cause of infection, one would surmise that the surgeon, at least, would at once attempt bolder and more efficacious means.

Fortunately, asepsis in child-birth has almost entirely done away with the possibility of puerperal infection, and this bugbear of obstetricians of a few years ago, has

almost sunk out of existence. Yet, from varied causes, including carelessness from either physician or nurse, or pre-existing suppurative process, child-bed fever still manifests itself occasionally both in Hospital and private practice, and its prompt treatment is a serious question.

The rapidity with which death frequently follows the first symptoms of puerperal infection is remarkable, and brooks of no delay in treatment. Hecker reported a case, not long ago, wherein death occurred so quickly that a diagnosis of apoplexy seemed justifiable. The number of deaths from puerperal infection reported as occurring within the first twenty-four or forty-eight hours after the appearance of untoward symptoms, is startlingly large.

Could the physician know of the moment when infection has taken place, prompt removal of the infectious matter, by irrigations and douches, would surely prevent general infection. But this, unfortunately, is impossible.

In laparotomies, a prognosis may be advanced very early, for, if infected, the patient will usually show, within a few hours after the completion of the operation, signs of fear, restlessness, weakness and depression, before any objective symptoms have manifested themselves. It is not to be wondered at, therefore, that within a comparatively short time an incurable puerperal infection may be developed. Even in Hospitals, where the patient's temperature is taken three times a day, the attending physician is often forced to confess that he has come too late to render any help, or to stay the infectious process.

The question naturally arises as to whether—even although we have come apparently "too late,"—there is not some more energetic means than mere washing out of the womb, at our command, and can we not, by means of these more heroic measures gain what we have lost in time?

If, in general surgery, the operator arrives too late to effect primary healing or to perform a primary operation, cannot a more extensive operation be equally successful? The surgeon cuts, scrapes and cauterizes

until all dangerous substances are removed from the wound. Logically speaking, a similar therapeutics is surely applicable in puerperal infections. If irrigation and douching have failed, it is because by these means a removal of the infectious matter has not been effected. There may be two reasons for this. Either the patient has already become septic, and is, perhaps, lost; or, within the womb, there is still a colony of microbes, or in other words, a culture of streptococci. Should the former be the case—as subsequent symptoms in spite of all our efforts will show—the patient's fate is sealed, and it would only be cruelty to subject her to further operative interference. If general sepsis has not yet supervened, a thorough scraping out, or curretting of the womb, will frequently stop the infectious process.

It was in the above lines that Dr. E. V. Braun argued the feasibility of the method advocated. The justification of the procedure will be better understood if puerperal fever is divided into three classes, viz., Pyæmic, Septicæmic and Sapræmic. In the last two classes, we are dealing with a process of decomposition in the womb; we find that saprophytes, and their ptomaines absorbed into the circulation have given rise to fever. There is no doubt but that a complete removal of this decomposing mass will effect a complete cure. As these sapræmic cases are usually light, and their prognosis good, there need be no question as to the justifiability of curretting.

So much for theory. Let us now review the practical value of the method, summed up from the experiences of operators both here and abroad.

Dr. Braun, in the *Arch. für Gynäkologie*, stated that this practice was adopted by him, especially in cases of sapræmic endometritis in child-bed. He used the method in 101 cases with the following results: Ninety-six of the cases were cured, and five died, but three out of these had already symptoms of general infection, a fourth died of purulent peritonitis attributed to escape of pus out of ostia of the tubes, and the fifth sank from hæmorrhage with septic symptoms ten days

after the scraping. In over two-thirds of the 101 cases, the labor had proceeded normally, and there had been no visible evidence of any damage to the placenta, yet the curette never failed to bring away necrosed and putrid tissues, which, on microscopic examination, proved to be fragments of placenta or decidua. The procedure, according to Braun, is only to be undertaken in cases of rise of temperature in child-bed, due to endometritis. This complication can be recognized by the distinct arrest of involution of the uterus, fœtor of the lochia, and fever coming on early in child-bed without signs of pelvic inflammation outside the uterus. When signs of an extension of the inflammatory process are present, and, above all, where general infection is evident, scraping is contra-indicated. A rise of temperature sometimes occurs during the first week after the use of the curette, but Braun has never seen any parametric exudation in his cases.

Both Braun and Dr. Heinrich Fritsch—who has of late given the subject careful attention, and contributed an interesting article in the *Deutsche Med. Wochenschrift*, April 16, 1891—agree that the operation is one comparatively free from danger. Hæmorrhages are seldom observed, neither is the procedure very painful. The uterus is washed out with a 1 in 1,000 solution of thymol before and after the scraping. The patient should be placed in the lateral position, the anterior portion of the os hooked carefully forward, and the vagina and perineum protected with a Sims speculum. In this way the womb may be scraped out without much inconvenience to the patient. That the womb may thus be thoroughly curretted has been shown by autopsies, and it is only in the folds of the cervix that the operation is not thorough. Braun, therefore, advocates a cauterization of this part. After the scraping and subsequent washing of the womb, an iodoform point is passed into the uterine cavity. Any abrasions of the vaginal mucous membrane are painted with pure tincture of iodine. The cervix and vagina are plugged for twenty-four hours, with iodoform gauze.

The danger of perforating the womb is but slight, especially if a broad, dull curette is used, and during the first days the womb is hard and firm. Here, however, we have varying opinions. Löhlein, at a *post-mortem* examination of a woman nine days after parturition, found the uterus soft and doughy. Liebman, of Triest, has also shown that in consumptives, and patients greatly run down, the uterus is easily perforated. Generally, however, in skilled hands, the operation may be safely performed, the uterus remaining firm until the fourth week.

Fritsch, while admitting with Braun the theoretic value of curetting for the removal of puerperal infection, nevertheless strongly condemns the general adoption of the methods, for the following reasons: first, because the differential diagnosis between sapremic and streptococcic infection is most difficult at the outset; second, Fritsch asserts that the seat of the infection is neither in the decidua, nor in the contents of the womb; neither can we look upon the case in the light of a septic wound. The disease has a deeper seat, usually in the parametrium. Fritsch believes that the infection starts from the cervix, because this part suffers most severely in parturition, and as microbes may easily be deposited here, where lacerations are so frequent. The parametritis at the base of the broad ligament, is in the immediate vicinity, indeed, is almost a continuation of the wounded cervix. If the infectious matter is deposited on the surface of the dilated cervix, and this part is subsequently drawn together, the infection is thus mechanically carried to the deeper tissues, and is, therefore, undisturbed by irrigation. This infection is rapidly carried further in the loose tissue of the parametrium, and suppuration ensues. If the surgeon wishes to remove the seat of infection, large cuts should be made in the parametrium to facilitate the discharge of pus, or else the entire septic uterus should be removed. This, says Fritsch, would be rational. A partial removal of the decidua will certainly not accomplish the desired end.

If Fritsch, and others who argue similarly,

are right, how do we account for the evidences of Braun's statistics which show a fall of temperature after curetting in 100 cases of puerperal infection? Perhaps, because all these cases were light, or it may be even that the subsequent irrigations and cauterization were productive of the good results and not the curetting.

Finally, it may be asked whether the method is ever positively indicated in these cases. To which it can only be answered that if the contents of the womb can be safely diagnosed as the cause of the trouble, it should be removed, and the procedure is as justifiable as the removal of a retained shred of the placenta. Further than this we cannot now go. The question is one, however, which critic and anti-critic will in time settle, and in the meanwhile these discussions and experiments may be watched with great interest.

CORRESPONDENCE.

COCAINE POISONING.

TO THE EDITOR M. AND S. REPORTER.—

Your editorial to-day raises anew the warning note touching cocaine and its dangers—one which the writer has sounded again and again, with a clinical support detailing nearly 300 cases, including 13 deaths.

In 1886, Dr. Wm. A. Hammond said, "he did not believe any dose of cocaine that could be taken was dangerous." That statement—mistaken and misleading—was promptly challenged by the writer, and that challenge so sustained by clinical facts in a paper: "Cocaine Dosage and Cocaine Addiction," read before the Med. Soc. of the Co. of Kings, Feb. 13, 1887; and another: "Cocaine Toxæmia," read before the Amer. Assoc. for the cure of inebriety, Nov. 8, 1887, that the British Med. Journal was impelled to say, editorially, "If it were needful to produce more proof of the unsoundness of Dr. Hammond's statement, Dr. Mattison has effectually done this."

In discussing my paper on "Cocainism," read before the D.C. Med. Soc., Washington, Dec. 24, 1890, Dr. Hammond confessed that he was wrong, and that nearly fatal results from cocaine had been noted under his own care.

In a fourth paper, "Cocaine Poisoning," by myself, read before the N. Y. Med. Legal Soc., March 9, 1891—to appear in THE REPORTER—the toxic record of cocaine was continued, making the most extensive resume of the subject ever presented.

Four words tell the story, COCAINE IS A POISON. Verbum Sap.

J. B. MATTISON.

Medical Director, Brooklyn Home for Habitués.

185 Brooklyn Avenue, May 2, '91.

PERISCOPE.

THERAPEUTICS.

HUMAN LYMPH IN THERAPEUTICS.

E. Magnat (*Le Bull. Médicale*, April 8, 1891) read a note to the Académie de Médecine on the employment of human lymph in the treatment of disease. The serous exudation of blisters, which the author has designated as human lymph, was injected in cases laboring under a variety of diseases, such as ulcers of the leg, pulmonary tuberculosis, typhoid fever, and others. The results obtained were good.

CHLOROFORM IN TYPHOID FEVER.

In the treatment of typhoid fever, excellent results have been obtained by Stepp (*La Clinique*, Brux. Jan'y 15, 1891) with the internal administration of chloroform. The drug was given according to the following formula:

R Chloroform..... 1 gramme.
Water..... 150 "

M. To be given in three doses, in the course of the twenty-four hours. The bottle should be shaken before using.

The influence of this treatment in the course of typhoid fever was certainly favorable. In the worst cases, insomnia and delirium, and the dryness of the mouth disappeared under the use of the remedy, while general amelioration was invariably observed. In from eight to ten days the fever diminished and convalescence began. In all the cases treated with chloroform the duration of the febrile period varied from nine to thirty days, eight being the minimum. The total amount of chloroform ingested to each patient varied from ten to twenty grammes. No untoward effects were ever observed in the course of the treatment. According to the author the favorable influence of chloroform in typhoid fever, is

due to the germicide properties possessed by the drug. Recent researches show that the remedy passes through the circulation as chloroform, and as such is eliminated by the organism. In the second place, chloroform administered in the way and in the doses indicated above, acts as anæsthetic and thus aids to control excitability.

HYOSCINE IN MANIA AND INSOMNIA.

Malfilatre and Lemoine report in the *Gaz. Méd. de Paris* the result of a trial of hyoscine on some sixty-two patients, chiefly of the maniacal class (*Practitioner*, xxxvii, p. 321). The results obtained were very favorable. In the great majority of cases they found that they had either an immediate and continued hypnotic effect from very small (three to five-tenths cmm.) or moderate (1 cmm.) doses administered hypodermically, and in only a very few were few larger doses required; and also that there did not appear to be such uncomfortable lasting after-symptoms as sometimes contra-indicate the employment of other hypnotics. These investigators feel justified in affirming that in hyoscine we have an excellent palliative in all conditions of insomnia with agitation, but they decline to commit themselves as regards its curative effects. Its inconveniences are the temporary intoxication it produces in some very sensitive individuals, and the necessity of steadily increasing the dose to produce the hypnotic action in some few others.—*The Dublin Journ. Med. Science*.

THE THERAPEUTIC USES OF EXALGINE.

The effects of this new remedy, exalgine or methylacetanilide, have been carefully studied by Desnos (*Bull. général de Thérapeutique*, Feb. 15, 1891). After reviewing the literature of the subject, Desnos gives the results of his experience in the treatment of disease by the new drug.

Exalgine was tried in the treatment of affections essentially characterized by pain, particularly in facial neuralgias, due to lesion of the trigeminal, and even to those of the occipital nerve. Congestive neuralgias, due to cold or a rheumatic condition, usually yielded to moderate doses; but if relapses occurred, the medicament was continued for a long time in large doses. A case is reported of a woman suffering from neuralgia, in whom enucleation of the eyeball was not successful in relieving pain. She was given exalgine in doses of from 3 to 22½ grains, with the result that she was discharged cured in the course of thirteen days.

It was observed that the drug acted most favorably in neuralgias due to anæmia and syphilis. In diffused headaches and migraines, the results were negative or doubtful. In intercostal neuralgias the effects were generally satisfactory.

A persistent, very painful neuralgia of the brachial plexus was completely subdued by a dose of 22½ grains. In this case a pronounced tingling, which soon passed away, was experienced along the branches of the plexus. In neuralgias of the ileo-lumbar region, of a uterine origin, the drug did good; but relapses, due to the persistence of the lesion in the genital organs, only yielded to large doses.

Sciatic neuralgias were also checked by exalgine, one truly remarkable case being reported. The author has likewise obtained good results with the drug in the treatment of visceral neuralgias, the acute pains of locomotor ataxia, and has known exalgine to be of benefit in the pains of menstrual hystericalgia. A case of paralysis agitans, due to emotional causes, was cured by exalgine, and the drug was found of great service in certain cases of rheumatism.

In conclusion, Desnos considers exalgine a therapeutic agent of great value—an analgesic which is neither a hypnotic nor an antithermic in the proper sense of the word. To obtain the good effects of the drug, it should be given in full amounts. The usual dose is 3½ grains, but 15 to 26 grains may be given without producing deleterious effects.—*Univ. Med. Mag.*

AGARICINE IN THE TREATMENT OF NIGHT SWEATS.

This drug has been used by Bocquillon (*Province Méd.*, Jan. 10, 1891) in the treatment of pulmonary phthisis. In these cases the remedy diminished the diarrhoea, lessened the cough and produced a more quiet sleep. Doses of from 5 to 8 milligrammes were given hypodermatically from 5 to 6 hours before the appearance of the sweats. Seifurt employs for hypodermatic use, the following solution:

R	Agaricine.....	0.05 grammes.
	Absolute alcohol.....	4.50 grammes.
	Glycerine.....	5.50 grammes.

M. This is a ¼ per cent solution of which a syringeful can be given 5 hours before the appearance of the sweats.

THE THERAPEUTIC EFFECT OF STRYCHNINE IN CARDIAC AFFECTIONS.

The *Medicinisch-chirurgische Rundschau*, February 1st, has an extended notice of a recent paper by Professor Baldo Zaniboni,

of Padua, on this subject. Zaniboni's article is based on a large number of clinical observations, with sphygmographic tracings, and appeared originally in the *Revista veneta*, Nos. 2 and 3, 1890. The following are his most important conclusions:

Strychnine is without question a very efficient exciter of cardiac activity. By its use the systolic impulse is strengthened, the diastole is prolonged, and attacks of arrhythmia are cut short; subsequently the arterial tension is increased and the pulse-rate, if rapid, is slowed; if retarded, is accelerated. Acute dilatation and the dangers of heart failure, especially of the right side, are removed. Respiration becomes freer, and attacks of dyspnoea are completely relieved. Only in cases in which the nervous and muscular elements of the heart are no longer susceptible of stimulation does strychnine remain without effect. Oedema, even when it has resisted treatment with digitalis, disappears quickly, and there is free diuresis without the occurrence of albuminuria, such as follows the use of strophanthus. The bodily temperature is not noticeably affected. The appetite improves and the action of the bowels is regulated in consequence of increased peristalsis. The contractility of the arteries is heightened by the vaso-motor action of the drug. The hypodermic injection of strychnine is well borne, and with careful antiseptis causes no local reaction. Beginning with one-sixty-fifth of a grain, the dose may be increased to one-thirtieth of a grain three or four times a day, without producing subjective or objective disturbances. The treatment may be stopped abruptly, even when the largest doses are being given, without causing any unpleasant symptoms. The effect of the salt is seen very quickly (in about ten minutes) after the injection, and lasts for several hours. Even after the long-continued use of strychnine no symptoms were noticed that pointed to any cumulative action of the drug.—*N. Y. Med. Jour.*

BRONCHITIS PRODUCED BY THE VAPORS OF PICRIC ACID.

A peculiar form of bronchitis produced by the vapors of picric acid is described by Regnault and Sarlet (*Annales d'hygiène*, March, 1891). The malady is characterized by paroxysms of dyspnoea, frequency of respirations, and of cough and the absence of a glairy expectoration at the end of the crisis. The paroxysms come during the day and also during the night. Death is rarely produced.

In a fatal case, observed by the authors, the patient's death was due to an intercurrent malady: *la grippe*. A chemical analysis showed the presence of picric acid in the urine, the blood and the liver. The patient, poisoned by the picric acid vapors, exhibited a condition of anæmia and a yellowish coloration of the skin, of the hairs on the surface of the body and of the parts, especially, mostly exposed to the toxic emanations. The diagnosis of the peculiar dyspnoea and asthma was easily made, especially after the analysis of the urine, which usually contained picric acid.

MEDICINE.

NEURASTHENIC STIGMATA.

Recent issues of the *Union Médicale* contain a résumé of Dr. Bouveret's lectures on neurasthenia. While the symptoms of this interesting disease are extremely varied and numerous, according to Dr. Bouveret's view there are certain distinct manifestations which are sufficiently constant to be called the stigmata of neurasthenia. These are headache, insomnia, muscular weakness, vertebral pain, atonic gastro-intestinal dyspepsia, to which are frequently added habitual dilatation of the pupil owing to feeble reaction to light, together with discoloration and objective and subjective coldness of the hands and feet.

While the headache is more or less persistent, the pain is not particularly severe, the sensation being more that of heaviness, fulness and constriction, as of a hand or cap pressing upon the scalp, giving rise to what Charcot calls the helmet symptom. In event of intense headache, which sometimes exists, it is circumscribed, may be limited to the forehead, one temple or both, to the occiput, or the back of the neck. Aching and weariness in the neck are common, and in themselves are rather good signs of neurasthenia. The neurasthenic headache is increased by work, intellectual effort, noise, and sudden emotion. During these exacerbations vertigo is not infrequent. True migraine may complicate this cephalalgia and render the condition doubly trying. Insomnia is of the persistent order, and is rebellious to treatment. It may be absent in women. In certain rare cases, irrespective of sex, the fatigue of work is followed by attacks of irresistible somnolence. Dreams are common, and more or less distressing. Sleep may come only toward morning, or it may visit the patient early in the night, leaving him to the horrors of wakeful visions after an hour or two. In either case the sufferer

rises unrefreshed, in a condition of extreme weariness, without energy and without hope, and as thoroughly sapped as if he had been up all night.

Mental depression in neurasthenia expresses itself as exhaustion of all the mental faculties. There is loss of memory, of judgment, of will, inability to fix the attention for any length of time, and to resist sufficiently the influence of psychic impressions. Impairment of will is the keynote to the psychic state in neurasthenia. It is impossible for the patient to pursue the even tenor of his way. The character changes. The thousand and one petty annoyances of daily life are converted into so many excuses for irritability, anger, and exhibitions of bad temper. General weakness exists, and a notable diminution of muscular force is usually present. After slight emotion, moderate physical fatigue, sometimes without assignable cause, there will come a sudden feeling of profound prostration and complete loss of strength, together with painful fatigue in the calves, knees and thighs. Vertebral pain is almost as common as headache. It is a sensation of heat, burning, lassitude, and strain along the spine. This has favorite points of location: the seventh cervical vertebrae, the lumbar vertebrae, and the sacral region. It may exist in the coccyx alone.

There are two forms of neurasthenic gastro-intestinal atony. In the first, only functional disturbances appear. In the second, the patient emaciates, loses strength, and objective symptoms are present. Abdominal examination reveals prolapse and dilatation of the stomach, flabbiness of the anterior abdominal parietes, together with descent of the kidneys and liver in certain instances, completing the anatomical complexus that Glenard has described under the title of enteroptosis. There are cases, not so rare either, where, after the earliest developments of neurasthenia, the patient passes progressively and rapidly from functional gastro-intestinal atony to enteroptosis of serious moment.

A chemical hypothesis to account for neurasthenic phenomena has recently been proposed by Professor Kowaleski, of Charkow, of which mention appears in the *American Journal of Insanity*, January, 1891. Acquired neurasthenia may be divided into two principal varieties: one where there is excessive mental strain or exertion without sufficient nourishment. The brain is starved with the rest of the body, and naturally fails to perform its functions. The other form of the disease is

found in those who lead lives of intense mental activity within a narrow field, and who have but little physical exercise. The tendency of modern civilization to specialism leads to the restricting of mental activity to a limited range of topics, tending to local exhaustion of the brain. This exhaustion may come about in spite of an abundant supply of food. In consequence of the sedentary lives led by persons engaged in intellectual pursuits, food may aggravate the evil, poisoning the brain by imperfectly assimilated material. Alcohol, tobacco, tea, and coffee taken to stimulate flagging energies, together with late hours to make good the losses of the day, serve to render bad matters worse. The congenital form of neurasthenia, when not connected with anatomical anomalies of the nervous system that can be demonstrated, must be considered due to defect of organization that conjecture may reasonably ascribe to its abnormal chemical constitution. In view of the frequent appearance of neurasthenia and allied disorders among children of drunkards, it seems probable that poisoning of the nervous system of the parent may result in defective chemical composition of the nerve-elements in the offspring, this being latter-day retribution following the eating of sour grapes by modern fathers.—*Med. Rec.*

GLYCOSURIA AND DIABETES.

MORITZ (*Münchener med. Wochenschrift*, Jan. 6, 1891) considers it probable that grape sugar is present in normal urine from the fact that the characteristic reaction with phenolhydrocine can be demonstrated. There are a great many cases where grape sugar appears in the urine which are not real diabetes mellitus; this may be called simple glycosuria. This symptom is comparatively harmless in the absence of all the severe general symptoms—emaciation, loss of strength, thirst, furunculosis, etc. A combination of these general symptoms with sugar in the urine determines a diagnosis of diabetes mellitus, but it is not safe to exclude the disease in all cases where sugar appears without the general symptoms, for there are certain instances where a small amount of sugar constantly present in the urine is the only symptom until a sudden outbreak of a general character occurs.

It is impossible to fix upon any one symptom which distinguishes simple glycosuria from true diabetes mellitus, but simple glycosuria may be said to be an increase of the

normal amount of sugar, which disappears with the cause, while diabetes mellitus is a true disease, chronic in nature, its characteristic being the persistence of the glycosuria. The author divides all cases into two groups—glycosuria occurring under pathological conditions, and glycosuria occurring under physiological conditions. He then quotes many pathological conditions give rise to glycosuria—injury to the floor of the fourth ventricle, extirpation of the pancreas, cirrhosis of the liver, and apoplexy, being among the number. Among the physiological conditions he considers the puerperium as the most import. Eighty per cent of all lying-in women have from .8 per cent. to 1 per cent of sugar in the urine. The so-called alimentary form of glycosuria occurs after the ingestion of a large amount of sugar. Some authors consider that this tendency to excrete sugar shows a disposition toward diabetes mellitus. Where this tendency to glycosuria is noticed only after the ingestion of sugar it may be considered physiological, but where it is found after a meal of starchy foods it may be considered pathological.

For clinical purposes diabetes mellitus may be divided into a mild and a severe form. In the first the sugar is taken from the carbohydrates of the food; in the latter this is not the case. In suspected cases the urine should be examined some hours after a meal of carbohydrates with little or no sugar. If sugar is present in the urine a diagnosis of diabetes mellitus may be made; if it is absent the disease may be excluded. In certain cases where a large amount of urine of low specific gravity is excreted, it is necessary to examine the urine passed shortly after the meals, and not a specimen of the mixed urine.

The author considers the fermentation test the only entirely reliable one. He advises the following simple apparatus: A test-tube is filled with a mixture of urine and yeast and is stopped with a gum cork perforated with a U-shaped tube. Two control tubes are filled, one with normal urine and yeast, and another with the suspected urine with yeast, and a little sugar added. Care must be taken that the urine is not rendered antiseptic by the administration of salol or salicylic acid to the patient. If the urine contains sugar, carbonic acid gas will collect in the upper part of the tube. He advises the combination of this test with one of the reduction tests to make the diagnosis absolutely sure.—*Univ. Med. Mag.*

SURGERY.

INSTANCES OF FOREIGN BODIES LODGED IN THE BODY.

Francis L. Haynes. gives in the *Annals of Surgery* a collection of cases of this nature which is of much interest :

I. A TOOTH IN A BRONCHUS PRODUCES A PULMONARY ABSCESS. IT IS EXPELLED SPONTANEOUSLY AND THE PATIENT RECOVERS.

A middle-aged man presented all the symptoms of a copiously suppurating cavity in the apex of the right lung, and was supposed to be afflicted with consumption. After I had attended him for three months, during which he improved greatly, he expelled a tooth from the lung during a severe paroxysm of coughing. Recovery from all symptoms of pulmonary disease was rapid and complete.

A minute cross-examination now showed for the first time that, one year previously, the man had, as he supposed, swallowed a tooth immediately after its extraction, and that his illness had dated from that time.

II. A PIECE OF SHEEP'S VERTEBRA IN THE LUNG PRODUCES AN ABSCESS WHICH, AFTER ONE YEAR, RESULTS IN DEATH.

A woman, æt. 50, while hastily swallowing some soup, felt that a hard substance had passed into the air passages. An immense cavity rapidly developed in the lower lobe of the right lung. After six months, during a severe paroxysm of coughing, a large piece of the body of a sheep's vertebra, the shape of a maltese cross (measuring 1 by $\frac{1}{2}$ by $\frac{1}{4}$ inch) was expelled. The cavity, however, continued to suppurate and the woman died about a year after the date of the accident. Prof. S. D. Gross examined this case but did not suggest any operative procedure.

III. A BEAN IN THE AIR PASSAGES CAUSES SPEEDY DEATH.

A boy, æt. 5, while holding some beans in his mouth, suddenly exclaimed that one had "gone down the wrong way." Suffocative symptoms were at once noted and continued until death 36 hours afterward. Physical examination showed that no air entered the right lung. The parents would not permit an operation.

IV. REMOVAL OF THE TIP OF A HARD RUBBER SOUND FROM THE PREGNANT UTERUS.

A healthy woman, two months pregnant, while inserting a hard rubber sound into the

uterus, broke off a piece two inches long, which remained in the organ. Dr. E. A. Follansbee was consulted, and asked me to assist in the management of the case. With the metallic sound the body could readily be felt, but it lay across the uterus, and its ends seemed to be embedded in the mucosa; it could not be removed until the cervix was dilated, which was at once accomplished by Goodell's dilator, under ether narcosis. The body was now readily removed by a slender pedicel forceps guided by the finger. As the membranes had been ruptured by the patient's probing, the uterus was emptied by the finger, and washed out.

V. A GLASS DISC REMAINS IN THE VAGINA FOR TEN YEARS, CAUSING A STRICTURE, WHICH REQUIRES TO BE INCISED, THAT THE DISC MAY BE REMOVED.

A woman, æt. 60, had worn a glass disc in the vagina continuously, for the relief of prolapsus, for ten years. As it finally produced a purulent discharge she asked me to remove it. One and a half inch up the vagina a stricture barely admitting the index tip was felt. It was incised in the median line posteriorly and a disc two inches in diameter removed. Unfortunately hæmorrhage was carelessly made, and the patient bled for two days before she thought it worth her while to send for me. It took two months to cure the resulting anæmia. After six months the patient reported that she was well and that the prolapsus had not recurred.

VI. A CHILD IS TREATED FOR NASAL CATARRH FOR FOUR YEARS, AND RECOVERS ON THE REMOVAL OF A SHOE BUTTON FROM THE NOSE.

A girl, æt. 8, had received much unavailing treatment for the relief of a profuse purulent discharge from the right nostril. On inserting a probe I distinctly felt a smooth hard body buried in a mass of rotten tissue between the inferior and middle turbinated bones about one inch behind the tip of the nose. The body, which was supposed to be dead bone, was easily removed, and proved to be an ordinary gaiter button. Recovery was rapid and complete.

FRACTURE OF THE LARYNX.

An interesting case of fracture of the larynx is reported by Dr. Sokolowski, in the *Centralblatt für die med. Wissenschaften*, April 11, 1891. The patient was a mill-hand, twenty years old, who was caught in the driving wheel of a machine, by her apron, which was fastened about her neck, and

thrown some distance. She immediately experienced severe pain in the larynx, difficulty in breathing, and expectorated a considerable quantity of blood. The neck was greatly swollen and crepitation over the larynx was distinctly felt, and a considerable depression of the cartilage on the left side to be seen. The laryngoscope showed two inflamed swellings immediately below the epiglottis. Tracheotomy being indicated, an incision over the larynx was made and the fracture found. One fragment of cartilage was pushed into the windpipe. This was removed, and breathing at once became easy. Still the extent of the fracture was such that a tube was inserted and left in place. The patient ultimately recovered.

SUFFOCATING GOITRE.

The following interesting case of extirpation of a goitre, is reported in the *Revue de Laryngologie, d'Otolog. et de Rhinolog.*, May 1, 1891. The patient was an Italian, seventeen years old, and Dr. Arthur Berti, of Modène, the operator. The man came from a district where goitre was very rare. His previous family histories were negative. Up to his thirteenth year he had always enjoyed good health. At this time a tumor appeared, of about the size of a small nut, a little to the right of the median line of the throat. The growth was freely movable, hard, and indolent. Soon after the tumor began to rapidly increase in size, until, when the patient presented himself at the hospital, it had attained the size of a large orange. Respiration was difficult and deglutition impossible. Extirpation was performed only with great difficulty, as the growth completely surrounded the trachea, nevertheless, its entire removal was effected. His wound healed up within six days, and no subsequent trouble was experienced by the patient.

GONORRHOEAL EPIDIDYMITIS.

Drs. Martin and A. C. Wood, in *The University Medical Magazine* in a study of this, the most frequent complication of gonorrhœa, reach the following conclusions:

1. Gonorrhœal epididymitis occurs most frequently in those who have received no treatment for the original urethritis. Its outbreak is frequently determined by violent or long-continued physical exertion, or by venereal excess.

2. The resultant induration of a gonorrhœal epididymitis does not cause obliteration

of the convoluted duct in the majority of cases. Statistics on this point are misleading, from the fact that it is practically only the few sterile patients who are subsequently observed by surgeons, and hence these form the greater number of the reported tabulations.

Of four cases of double epididymitis observed by us, not under treatment for sterility, there was an abundant discharge of spermatozoa in three.

3. Unilateral epididymitis may, in exceptional cases, cause permanent sterility. During the acute attack very few spermatozoa are found in the semen.

4. Obliteration of the duct does not cause atrophy of the testicle.

5. Pain, tenderness and swelling in the groin, dependent on funiculitis, practically always precede gonorrhœal epididymitis. Prompt treatment at this stage may abort the inflammation of the epididymus.

6. The development of gonorrhœal epididymitis is, in a great measure, avoided by the use of antiseptics by the mouth, and the application of a suspensory bandage to the scrotum.

7. The pain and disability usually attendant on gonorrhœal epididymitis are promptly allayed by puncture, or aspiration of the serous exudate contained in the tunica vaginalis and the cellular tissue placed behind and above the epididymus, followed by the application to the scrotum of a thick layer of cotton, over which is placed a Mackintosh suspensory, so made that it presses the inflamed organ upward against the pubes, and, by means of lacings at the side, can be so drawn in that uniform lateral support is secured. Punctures are necessary only in the most acute cases.

8. The subsequent induration after the acute stage is most quickly resolved by a continuance of the dressing above described, together with the local application of belladonna and mercury ointment, and the internal administration of iodide of potassium.

GYNÆCOLOGY.

CANCER OF THE BREAST TREATED BY INJECTION OF METHYL-VIOLET.

Dr. Edw. T. Grün, in the *Brit. Med. Jour.* writes: The patient, whose case is described below, presented herself suffering from a well-marked circumscribed indurated tumor of the breast, about the size of a small egg. The case was considered a particularly suitable one for testing the efficacy

of Dr. Mosetig's treatment by injection of methyl-violet.

The treatment having been explained to the patient, her consent was readily obtained, and a course of twenty injections was prescribed. This treatment was commenced with a dose of 10 minims of 1 part of methyl-violet in 300 parts sterilized water; administered February 7th, 1891. The injections were given daily. The first ten injections produced no pain and no inflammation of the breast, but, after the tenth injection, a slight redness of the skin became apparent, which increased after each injection. On the fifteenth day of treatment some suppuration of the breast tissue was present, masking, to a great extent, the tumor. The injections were still continued. After the twentieth injection, on careful examination, the tumor being still present, it was decided to remove the breast in the ordinary manner.

The operation was performed by Dr. Hugh Fenton, with strict aseptic precautions, after the manner of Dr. Edgar Kurz, of Florence, described in the *Deutsche medicinische Wochenschrift* of November 20th, 1890, and, although considerable suppuration was present in the breast, the wound healed by first intention at the end of seven days, the only application to the breast having been dry Gamgee tissue, carefully sterilized previous to the operation in the hot air sterilizer, as were all the instruments used in the operation, no carbolic acid or iodoform being used at any time during or after the operation.

The breast, on examination after removal, was found to contain a typical tumor of the scirrhus cancer variety. The growth presented no alteration that could be attributed to the methyl-violet, even when examined, after hardening and staining, by very high microscopic power, such as the $\frac{1}{12}$ th and $\frac{1}{4}$ th oil emersion. No degeneration of the cancer structure could be observed around the growth. Considerable suppuration of the glandular tissue of the breast had taken place, which, no doubt, under ordinary antiseptic dressing, would have considerably retarded primary union. The result of the treatment by methyl-violet must, in this case, be regarded as purely negative. The rapid healing of the wound speaks greatly in favor of the aseptic sterilized dressing, now so largely adopted on the Continent with such good results, Dr. Kurtz giving a mortality of 2 in 169 cases of operations, of amputations, resections, laparotomies for perforation in typhoid fever, and other major operations.

WOUNDS OF THE URETERS IN LAPAROTOMIES.

During the last session of the French Congress of Surgery, Dr. Pozzi read a paper on wounds of the ureters in laparotomies. Pozzi has succeeded in finding the histories of several cases, including one observed by Gusseron and one occurring in his own experience.

If the wound of the ureter is lateral it is possible to make a suture. In one case thus treated the patient died. In another reported by Gusseron recovery followed the operation. Wounds of the ureters are most likely to be produced during the removal of retro-peritoneal cysts.

The case reported by Pozzi was that of a woman fifty-three years old, with an intraligamentous cyst. The tumor had been of rapid growth, and the patient's general condition was very poor. Laparotomy was performed, and revealed a large red tumor with a rough surface. The tumor was enucleated with great difficulty, being firmly adherent. During the course of the operation one of the ureters, which was attached to the tumor, was cut through. The operation was completed, a Mickulicz tampon being used and the end of the ureter sutured to the abdominal wound. Subsequently, nephrectomy was performed, and the patient made a good recovery.

OBSTETRICS.

OVARIAN PREGNANCY.

At a recent meeting of the Royal Medical Society of Vienna, reported in the *Wiener Med. Presse*, April 12, 1891, Dr. Herzfeld told of an interesting case of ovarian pregnancy. The patient was a multipara, thirty-three years old, and on March 12, gave birth to a child at the normal end of gestation. After delivery the abdomen remained distended, and a second fetus was clearly definable above the empty womb. The patient did not come into the hospital until the fetus was dead. Dr. Herzfeld performed laparotomy and removed the fetus with ease, it being attached to the adnexa of the uterus by a small pedicle. The question of tubal pregnancy could be set aside as the right tube could be traced in its entire length. The uterus was empty and the left adnexa normal. An anatomical examination proved the case to be one of ovarian pregnancy. This case is not only of interest because it occurred in conjunction with a normal pregnancy, but especially so as it

definitely proves the possibility of a pure ovarian pregnancy, and because it continued until full term.

EPILEPSY FROM A DEPRESSED FRACTURE PRODUCED WITH THE OBSTETRIC FORCEPS.

A boy, sixteen years old, came under Mr. Lane's care for epilepsy (*Lancet*, Jan. 17, 1891). He had been subject to these fits for two years, or from the age of fourteen years. When he was about to have a fit he noticed a twitching at the junction of the middle and lower thirds of the leg on its outer aspect, and his foot and knee then jerked in a manner that resembled ankle clonus and knee-jerk. A pain then ran up the outer side of the leg and thigh, through the left side of the trunk to the arm, then to the left side of the face, and, when the fit was severe, to the right arm.

On examination, a groove three inches and a quarter long was found on the right side of the head, extending from an inch behind the coronal suture to about the same distance in front of the lambdoid suture. Its anterior extremity was vertically above the external auditory meatus, and its lower limit reached just below the temporal ridge. From this it extended downward and backward toward the external occipital protuberance. The left arm was the smaller and weaker, its muscles were less firm and its movements were distinctly clumsy. There was no difference in the appearance of the muscles of the legs, but the patient had never had the same confidence in the left that he had in the right leg. By simply raising the left foot to a right angle, a very rapid clonus could be obtained. By using more force a clonus could be produced in the right ankle. The plantar, knee, and abdominal reflexes were exaggerated on both sides, but most decidedly on the left. The depression on the right side of his skull was said to have been noticed immediately after birth, the delivery having been effected with the forceps with much difficulty. It had become less conspicuous as he had grown older. The depressed area of bone was finally removed. It was found to be very thin and vascular, and appeared to encroach but little on the cranial cavity. The dura and subjacent brain appeared healthy. The wound healed by primary union. Since the operation, fits have occurred at longer intervals and are much slighter. He has gained power in the left arm and leg, and never suffers from headache, and has become mentally much brighter.

PÆDIATRICS.

OBSTETRICAL PARALYSIS IN THE NEW-BORN.

Not a year passes but what several cases of paralysis, dating from birth, are brought before the various surgical clinics of the continent. Most of these cases are children suffering from paralysis of the upper extremities, and are the results of injuries sustained during difficult labors.

These paralyzes, which are directly due to obstetrical procedures, such as version, the use of forceps, traction on the limbs, etc., have been recognized by the profession for some time. Dr. Comby, of the *Société médicale des hopitaux*, has been recently engaged in investigating their origin and prognosis, and a report of his work is given in the *Revue Médicale*, March, 1891. The facial paralysis, he claims, is due to compression by the forceps; likewise, frequently, the paralysis of the lower extremities. Rarely are the latter caused by injury to the spinal column or the cord.

The paralysis of the upper extremities, called "radicular paralysis" by Comby, is directly due to a stretching or compression of the brachial plexus, caused either by application of the forceps, version, or hooking the shoulders of the fœtus, by means of the operator's finger or by an instrument.

Erb has demonstrated that all these violences cause a lesion of the fifth and sixth cervical nerves; nearly always the paralyzes occur in the same muscles: the deltoid, the sub-scapular, the biceps, and the coracobrachial. The radicular paralysis may, however, be complete and include all the muscles of the upper extremities.

The prognosis of such paralyzes is always serious. Duchesne holds that unless active treatment is instituted very early, a hopeful prognosis cannot be entertained; and the child, which in other respects may be strong and healthy, will surely remain a cripple.

According to Duchesne, the treatment includes Faradisation—applications of the current being made two or three times a day, and continued for five or ten minutes—also the application of the continuous current; and finally these means may be augmented by massage, stimulating frictions with turpentine, and salt baths. Dr. Gouffroy recommends strongly electrization by means of the galvanic current, not in a continuous current, but interrupted. For the ultimate success of the case, it is, of course, of utmost necessity that the treat-

ment should be instituted as early as possible, and most carefully regulated.

A CASE OF TRISMUS NEONATORUM
TREATED WITH SULPHONAL.

Dr. Julius Berenyi (*Pester mediz.-chirurg. Presse*, No. 7, 1891; *Therapeut. Monatsh.*, March, 1891) reports the case of a child, eight days old, who had tetanus on the fifth day after birth. On examination he found the internal organs normal, the pulse 148, the respirations 50 and quiet. The paroxysms were initiated by crying fits and great restlessness. The skin assumed a bluish color, and around the root of the nose the integument was thrown into thick folds. The nostrils became distended, the buccinators were rigid, the mouth was slightly opened, but would not admit the tip of the little finger. The abdominal wall was hard and tense, the upper extremities were crossed in a flexed position over the chest, the thumbs were spasmodically flexed inward, the vertebral column was perfectly rigid. From nine o'clock in the morning to two o'clock in the afternoon the little patient had five attacks, of which the fourth lasted an hour. Berenyi administered twenty centigrammes (3 grains) of sulphonal in an enema, and also gave the drug by the mouth. After the fifth attack, which was less intense than the others, the child began to take the breast. On the same day three attacks of diminished severity occurred. On the following day the paroxysms became less frequent and intense, and on the sixth day of treatment had disappeared completely. Altogether, ten grammes of sulphonal were employed, without the occurrence of somnolence or disagreeable after-effects.

HYGIENE.

ON THE RELATION OF ATMOSPHERIC
ELECTRICITY, MAGNETIC STORMS,
AND WEATHER ELEMENTS TO A
CASE OF TRAUMATIC
NEURALGIA.

R. Catlin, U. S. Army, writes in the *Medical News*: In the relationship of atmospheric electricity to pain, it is shown that by a comparison of 120 daily curves taken on neuralgia periods with the mean of the same number for ten consecutive days of each month, pain seeks identity with both lower positive curves and with the negative, and with fluctuations of great amplitude.

For the influence of May storms on pain the maximum auroral period of 1882-83

was selected; of this period, seven of the greatest magnetic storms were chosen. Accompanying each was pain, and in the majority of cases pain of unusual intensity prevailed. The great storm of November, 1882, the greatest of which we have a record, shows the relationship to be unequivocal. In the other cases the magnetic storm was coincident with other causes, which may or may not have had something to do with pain, but in four cases no dry or wet cyclone was in any way connected with the trouble.

The comparison of the weather elements—such as pressure, temperature, force of wind, humidity, relative and absolute, days of rain, depth of rain, hours of sunshine, number of storms, and ozone—with pain—covers a period in no case of less than five years. Of these the increasing temperature curve, the hours of sunshine curve, and the absolute vapor curve, operate to diminish pain, while all the others are identified more or less with pain. In the monthly products for fourteen years it appears that the "depth of rain," ozone, and "number of days of rain," in this order, but almost equally, constituted the best standards for pain measurement. By generalizing on the extremes through all these years, by taking the twelve months of greatest pain and the twelve of least pain, the above conclusions are verified, and the law stated in general terms, as follows:

Maximum pain bears a direct proportion to storm frequency, and an inverse proportion to temperature and elastic force of vapor; and minimum pain bears an inverse proportion to storm frequency, and a direct to temperature and elastic force of vapor; while depth of rain accompanies the number of storms and maximum pain. Charts of relative storm frequency and geographical pain charts are thus related.

What are known as "spells," or "types," of weather, lasting from one to three weeks, probably due to the relative position of the great anti-cyclone areas, having their influence on pain condition. This fact was recognized early in the history of this case, in 1869. Increased amount and intensity of pain accompany these "spells," particularly at their beginnings. Covering a period of fifteen years the relative ratios of the monthly products of pain were as follows: February, 176; March, 175; January, 174; December, 168; November, 164; April, 161; May, 160; July, 159; June, 154; September, 153; and October, 153. The ratios were determined by dividing the total number of hours of neuralgia of each month by the

total number of hours in the month for the whole period of fifteen years.

Perhaps the most difficult and complex part of the problem is in offering an explanation of the diurnal fluctuations of pain.

The record of hourly beginnings of pain covers a period of more than eighteen years; and the curve of the record of hourly beginnings of storms and the amount of rain of each covers a period of sixteen years.

The daily pain curve exhibits 3 pain maxima; the first at 11 A. M., the second at 2 P. M., and the third at 7 P. M. The part of the curve at 6, 7, and 8 A. M. has almost an inverse counterpart in 8, 9, and 10 P. M., but in the curve from 9 A. M. to 7 P. M., there is a very important minimum at 12 M. and 1 P. M., then a subordinate minimum at 3 P. M., very like that at 10 A. M., followed at 5 and 6 P. M. by a distinct minimum.

By placing on the pain curve the storm curves for the sixteen-year period, it becomes manifest that while the absolute values of the rain depths and number of storms on the pain curve do not show a full correspondence, it is, however, clear at once that there is a relative value between the two and the pain.

In all the discussions of this subject to this time, only instrumental records, such as synoptic charts, thermograms, etc., have been brought into use, but it is clear that the physical effects produced by the temperature on the southeast side of a cyclone is very different from the same record-temperature on the west or the northwest side.

It is found that the eastern edge of the neuralgic crescent lies more than six hundred miles, or about twenty-three hours to the east of the centre of the "lows," but no two cyclones or rain conditions are exactly alike, and have different kinds of rain, and when we consider that there are two atmospheres—one of a dry, gaseous air, and another one distinct, of aqueous vapor, with the latter never thoroughly intermixed with the former, and never in a state of equilibrium—we partially realize how impossible it is in any given storm to get a complete record by instruments, or of those which are the best pain-producers, for without apparent instrumental cause they vary much in this respect.

No local hygrometric reading can give anything more than a vague approximation of the quantity of vapor or its mixture in a vertical column of air.

A typical neuralgic atmosphere, anticipating a cyclone, may be a dry air with a diminishing light, variable wind, and a

pale, delicate, bluish whiteness in the atmosphere, more marked toward the horizon, and in the first stage more marked in the western horizon. The sickly whiteness may increase for from twenty to sixty hours, with an increasing discomfort when exposed to the peculiarly penetrating power of the sun's rays, but during all this typical condition there is nothing which has measured the changing aspect of the air, nor its changing condition of heat permeability, nor the absolute vapor, except at the surface, nor the distinctive character of the cyclone heat in the southeast quadrant, nor the direction of the upper and cross currents of wind, nor, above all, the modifications of the diurnal and "semi-diurnal" effect superimposed on the cyclone movement. It therefore seems important, in studying the hourly phases of pain, that meteorological charts should be supplemented by a descriptive narration to complete the record, and a closer study of the effect of diurnal change on weather.

HYGIENE IN FRANCE.

Recently the French Chamber of Deputies have considered a general law governing workers in factories, child labor, etc. M. de Mun proposed an amendment providing that women should not be allowed to work the first four weeks after confinement. The proposition created a lively discussion, the general tenor of which was to the effect that the private life of citizens should not be interfered with to the extent proposed, and that the fixing of an arbitrary limit of four weeks was not wise, as many would be able to be at work long before that time, while others would be incapacitated far beyond the limit. One member proposed that compensation by the State be given to the extent of one franc per day. The amendment was finally tabled by a decisive vote.—*Le Bulletin Médicale.*

MEDICAL CHEMISTRY

PRESERVATION OF HYDROGEN PEROXIDE.

For this purpose, Kingzett recommends the addition of a small amount of ether. Experiments conducted by the author show that pure hydrogen peroxide lost, in twenty-eight days, ten per cent.; in ninety-eight days, 27.4 per cent.; in two hundred days, thirty-nine per cent.; and in four hundred and ninety days, 89.2 per cent. The addition of sulphuric acid reduced these figures to 9, 23, 27½, and 68.3, respectively.

Alcohol reduced them to 1, 7, 4, 7.4, and 22.8, respectively, while ether still further reduced them, showing a loss of the peroxide in the times mentioned of 0, 1.3, 2.4, and 15.9, respectively.—*Med. Rec.*

NEW REACTION OF HYDROCHLORATE OF COCAINE.

M. Schell, student of pharmacy at Mulhouse, states, in the *Journal de Pharmacie d'Alsace Lorraine*, that if a minute quantity of a mixture of calomel and hydrochlorate of cocaine be moistened with distilled water a deep grayish coloration at once takes place. Care must be taken to avoid too great a quantity of water. No other alkaloidal salt gives this reaction, though if free atropine be heated with calomel and water to about 212°F. a black or blackish coloration ensues. The same result is obtained when a mixture of calomel and atropine is treated with very dilute alcohol. It is rather remarkable that cocaine (the base) in the one case, and the salts of atropine in the other, do not yield the results above mentioned.—*Nat. Druggist.*

TO DETECT COPPER COLORING MATTER IN TEA.

Sometimes worthless and exhausted tea-leaves are restored to their natural color and made to look like a superior article of green tea by coloring with copper or drying on copper plates. The addition of a little aqua ammoniac to an infusion of tea thus colored will at once produce a blue color, more or less intense, according to the amount of copper present. The presence of copper coloring matter in pickles, preserved vegetables, etc., may be similarly detected.—*Nat. Drug.*

THE ALKALINITY OF THE BLOOD WHEN CONCENTRATED BY THE ACTION OF LARGE DOSES OF SODIC SULPHATE.

J. Swiatecki (Hoppe-Seyler's *Zeitschr. f. physiol. Chem.*, November, 1890) discusses this question. In 1850, C. Schmidt made the observation that in the algid stage of cholera the blood loses its alkalinity so markedly that in many instances it may even redden blue litmus paper—an observation that has often since been confirmed, as, for example, by the French Commission during the cholera in Egypt in 1883. Mya and Tassinari, who have investigated the

different diseased processes which affect the alkalinity of the blood, have also studied its behavior under the influence of certain purgatives, such as infusion of senna, magnesia, and sodic sulphate, but without obtaining any positive results. The author accordingly pursued in the University of Warsaw a series of researches upon dogs with Glauber's salts, and as the result of them he concludes that the alkalinity of the blood increases when its specific gravity is raised by means of large doses of these salts; that this rise can be explained by the increased transudation of acids, as well as alkalies, from the blood into the intestine in accordance with the laws of osmose; and that the attempt to explain the increased alkalinity after the use of mineral waters exclusively through the passage of basic salts out of the intestine into the blood is not satisfactory.

NEWS AND MISCELLANY.

TUBERCLE BACILLI AT THE POINT OF INFECTION.

By inoculation on guinea-pigs and rabbits, Tangel has established (*Monatsh. f. prakt. Derm.*, No. 4, February, 1891) the fact that tubercle bacilli cannot penetrate the body without producing tuberculous changes at the point of entry. He infers, therefore, that in primary tuberculosis of the lymphatic glands, or of the bones, if after even a considerable time there is no tuberculous change externally, the tuberculosis could not have been produced by external infection.—*Brit. Med. Jour.*

IMPORTANT IMPROVEMENT IN MICROSCOPIC LENSES.

It is stated that an immense improvement has recently been effected in the manufacture of glass for optical instruments by means of the addition to the ordinary materials of phosphorus and chlorine, which in some as yet unexplained way cause the glass to be very much more transparent, and enable it to receive a much higher degree of polish than any optical glass hitherto manufactured. Thus microscopes can be made which will render objects of the diameter of only the one-eighth millionth of a millimeter visible, whereas with the best instruments now in use the diameter of the smallest object that can be seen is one-sixteenth thousandth of a millimeter.